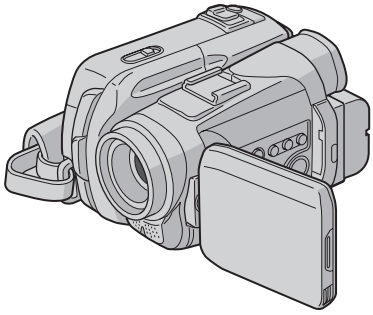
JVC

SERVICE MANUAL

DIGITAL VIDEO CAMERA

GR-DF420EK, GR-DF420EX, GR-DF420EY, GR-DF420EZ, GR-DF425EK, GR-DF425EG, GR-DF430EK, GR-DF460EK, GR-DF470EK, GR-DF470EX, GR-DF470EY, GR-DF470EZ



Mini DV PAL

SD

MultiMediaCard

GR-DF420EKM, GR-DF420EXM, GR-DF420EYM, GR-DF420EZM,
GR-DF425EKM, GR-DF425EGM[M5D5S2] ,
GR-DF430EKM[M5D5S3],GR-DF460EKM[M5D5S6],
GR-DF470EKM, GR-DF470EXM GR-DF470EYM, GR-DF470EZM[M5D5S7]

For disassembling and assembling of MECHANISM ASSEMBLY, refer to the SERVICE MANUAL No.86700(MECHANISM ASSEMBLY).

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No.YF087
2005/3

SPECIFICATION

■Camcorder

For General	Power supply		DC 11.0 V(Using AC Adapter) DC 7.2 V (Using battery pack)
	Power consumption		Approx. 3.2 W(3.5W*)(LCD monitor off, viewfinder on) Approx. 4.2W (4.5W*)(LCD monitor on, viewfinder off) * Using LED Light (LED Light model only)
	Dimensions (W × H × D)		75 mm × 74mm × 111 mm (with the LCD monitor closed and the viewfinder pushed back in)
	Weight		Approx. 400g (without battery, cassette, memory card * and lens cap) Approx. 480 g (incl. battery, cassette memory card *and lens cap) * GR-DF430,460,470 only
	Operating temperature		0°C to 40°C
	Operating humidity		35% to 80%
	Storage temperature		-20°C to 50°C
	Pickup		1/6" CCD
	Lens		F 1.2, f = 2.6 mm to 39 mm, 15:1 power zoom lens
	Filter diameter		Ø30.5 mm
	LCD monitor		2.5" diagonally measured, LCD panel/TFT active matrix system
	Viewfinder		Electronic viewfinder with 0.16" color LCD
	Speaker		Monaural
	LED Light		Effective distance: 1.5 m
For Digital Video Camera	Format		DV format (SD mode)
	Signal format		PAL standard
	Recording/Playback format	Video	Digital component recording
		Audio	PCM digital recording, 32 kHz 4-channel (12-bit), 48 kHz 2-channel (16-bit)
	Cassette		Mini DV cassette
	Tape speed		SP: 18.8 mm/s, LP: 12.5 mm/s
	Maximum recording time (using 80 min. cassette)		SP: 80 min., LP: 120 min.
For Digital Still Camera (GR-DF460,470 only)	Storage media		SD Memory Card/MultiMediaCard
	Compression system		JPEG (compatible)
	File size		Still image : 2 modes (1024 × 768 pixels/640 × 480 pixels) Moving image:1 mode (160 × 120 pixels)
	Picture quality		2 modes (FINE/STANDARD)
For Connectors	S	S-Video input (GR-DF430,470 only)	Y: 0.8 V to 1.2 V (p-p), 75Ω , analogue C: 0.2 V to 0.4 V (p-p), 75Ω , analogue
		S-Video output	Y: 1.0 V (p-p), 75Ω, analogue C: 0.29 V (p-p), 75Ω, analogue
	AV	Video input (GR-DF430,470 only)	0.8 V to 1.2 V (p-p), 75Ω, analogue
		Video output	1.0 V (p-p), 75Ω, analogue
		Audio input (GR-DF430,470 only)	300 mV (rms), 50 kΩ , analogue, stereo
		Audio output	300 mV (rms), 1 kΩ, analogue, stereo
	Microphone	input	Ø3.5 mm, stereo
	DV	Input*/output * GR-DF430,460, 470 only	4-pin, IEEE 1394 compliant
	USB(GR-DF460,470 only)		Mini USB-B type, USB 1.1/2.0 compliant

■AC Adapter

Power requirement	AC 110 V to 240 V, 50 Hz/60 Hz
Output	DC 11 V, 1 A

Specifications shown are for SP mode unless otherwise indicated. E & O.E. Design and specifications subject to change without notice.

SECTION 1
PRECAUTIONS

1.1 SAFTY PRECAUTIONS

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold.However,in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

1.1.1 Precautions during Servicing

(1) Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product.When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

(2) Parts identified by the ⚠symbol and shaded ( ) parts are critical for safety.
Replace only with specified part numbers.

NOTE :
Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

(3) Fuse replacement caution notice.
Caution for continued protection against fire hazard.
Replace only with same type and rated fuse(s) as specified.

(4) Use specified internal wiring. Note especially:
- Wires covered with PVC tubing
- Double insulated wires
- High voltage leads

(5) Use specified insulating materials for hazardous live parts. Note especially:
- Insulation Tape
- PVC tubing
- Spacers
- Insulation sheets for transistors
- Barrier

(6) When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

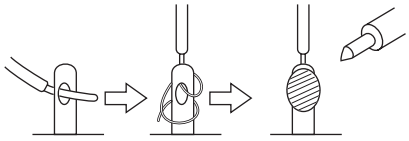


Fig.1-1-1

(7) Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

(8) Check that replaced wires do not contact sharp edged or pointed parts.

(9) When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

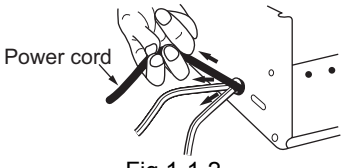


Fig.1-1-2

(10) Also check areas surrounding repaired locations.

(11) Products using cathode ray tubes (CRTs)In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits.Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

(12) Crimp type wire connectorIn such cases as when replacing the power transformer in sets where the connections between the power cord and power trans former primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

- **Connector part number** :E03830-001
- **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
- **Replacement procedure**

a) Remove the old connector by cutting the wires at a point close to the connector.Important : Do not reuse a connector (discard it).

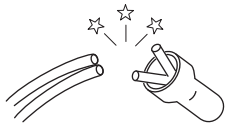


Fig.1-1-3

b) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

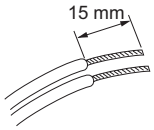


Fig.1-1-4

c) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

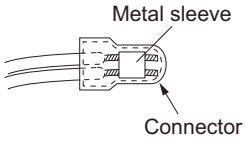


Fig.1-1-5

d) As shown in Fig.1-1-6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

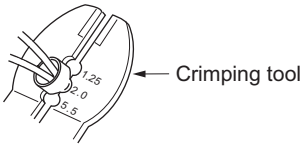


Fig.1-1-6

e) Check the four points noted in Fig.1-1-7.

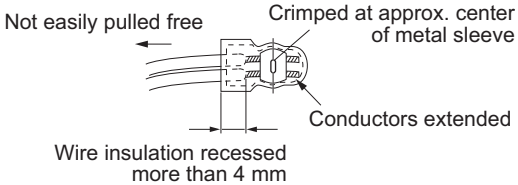

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.1-1-7

1.1.2 Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

(1) Insulation resistance test
Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).See table 1 below.

(2) Dielectric strength test
Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See Fig.1-1-11 below.

(3) Clearance distance
When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See Fig.1-1-11 below.

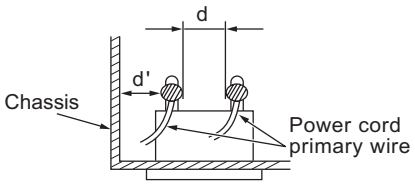


Fig.1-1-8

(4) Leakage current test
Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
Measuring Method : (Power ON)Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See Fig.1-1-9 and following Fig.1-1-12.

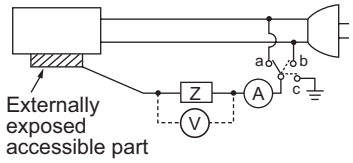
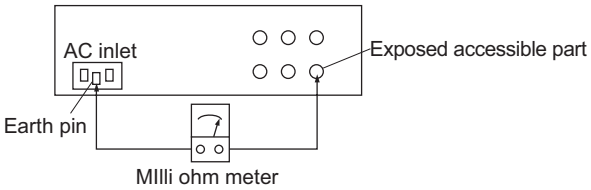


Fig.1-1-9

(5) Grounding (Class 1 model only)
Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).Measuring Method:
Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See Fig.1-1-10 and grounding specifications.



Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

Fig.1-1-10

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦R≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class Ⅱ) AC 1.5 kV 1 minute (Class Ⅰ)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Fig.1-1-11

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Fig.1-1-12

NOTE :
These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

2.1 DIFFERENCE LIST

The following table indicate main different points between models GR-DF420EK, GR-DF420EX, GR-DF420EY, GR-DF420EZ, GR-DF425EK, GR-DF425EG, GR-DF430EK,GR-DF460EK, GR-DF470EK, GR-DF470EX, GR-DF470EY AND GR-DF470EZ.

MODEL NAME	GR-DF420EK	GR-DF420EX	GR-DF420EY	GR-DF420EZ
LED LIGHT	NO	NO	NO	NO
MEMORY CARD	NO	NO	NO	NO
USB TERMINAL	NO	NO	NO	NO
DV TERMINAL	YES(OUT)	YES(OUT)	YES(OUT)	YES(OUT)
ANALOG INPUT	NO	NO	NO	NO
REMOTE CONTROL	RM-V720US	RM-V720US	RM-V720US	RM-V720US
VIDEO/MEMORY	NO	NO	NO	NO
AC ADAPTER	AP-V14E	AP-V17E	AP-V17E	AP-V17E
AC CORD	YES(BS Plug)	NO	NO	NO
USB CABLE	NO	NO	NO	NO
CD-ROM	NO	NO	NO	NO

MODEL NAME	GR-DF425EK	GR-DF425EG	GR-DF430EK	GR-DF460EK
LED LIGHT	NO	NO	NO	YES
MEMORY CARD	NO	NO	NO	MMC(8MB)
USB TERMINAL	NO	NO	NO	USB(VC)
DV TERMINAL	YES(OUT)	YES(OUT)	YES(IN/OUT)	YES(OUT)
ANALOG INPUT	NO	NO	YES	NO
REMOTE CONTROL	NO	RM-V720US	RM-V720US	RM-V720US
VIDEO/MEMORY	NO	NO	NO	YES
AC ADAPTER	AP-V14E	AP-V17E	AP-V14E	AP-V14E
AC CORD	YES(BS Plug)	NO	YES(BS Plug)	YES(BS Plug)
USB CABLE	NO	NO	NO	YES
CD-ROM	YES	NO	YES	YES

MODEL NAME	GR-DF470EK	GR-DF470EX	GR-DF470EY	GR-DF470EZ
LED LIGHT	YES	YES	YES	YES
MEMORY CARD	MMC(8MB)	MMC(8MB)	MMC(8MB)	MMC(8MB)
USB TERMINAL	USB(VC)	USB(VC)	USB(VC)	USB(VC)
DV TERMINAL	YES(IN/OUT)	YES(IN/OUT)	YES(IN/OUT)	YES(IN/OUT)
ANALOG INPUT	YES	YES	YES	YES
REMOTE CONTROL	RM-V720US	RM-V720US	RM-V720US	RM-V720US
VIDEO/MEMORY	YES	YES	YES	YES
AC ADAPTER	AP-V14E	AP-V17E	AP-V17E	AP-V17E
AC CORD	YES(BS Plug)	NO	NO	NO
USB CABLE	YES	YES	YES	YES
CD-ROM	YES	YES	YES	YES

SECTION 3
DISASSEMBLY

3.1 BEFORE ASSEMBLY AND DISASSEMBLY

3.1.1 Precautions

- Be sure to disconnect the power supply unit prior to mounting and soldering of parts.
- Prior to removing a component part that needs to disconnect its connector(s) and its screw(s), first disconnect the wire(s) from the connector(s), and then remove the screw(s).
- When connecting/disconnecting wires, pay enough attention not to damage the connectors.
- When inserting the flat wire to the connector, pay attention to the direction of the flat wire.
- Be careful in removing the parts to which some spacer or shield is attached for reinforcement or insulation.
- When replacing chip parts (especially IC parts), first remove the solder completely to prevent peeling of the pattern.
- Tighten screws properly during the procedures. Unless otherwise specified, tighten screws at a torque of 0.069N·m (0.7kgf·cm). However, as this is a required value at the time of production, use the value as a measuring stick when proceeding repair services. (See "SERVICE NOTE" as for tightening torque.)

3.1.2 Destination of connectors

Two kinds of double-arrows in connection tables respectively show kinds of connector/wires.

⇔ : Flat wire ↔ : Wire ⬌ : Board to board (B-B)
: The connector of the side to remove

CONN. No.	CONNECTOR					PIN No.
CN2a	MAIN	CN101	⇔	MONI BW	CN761	40
CN2b	MAIN	CN103	↔	MINI BW	CN762	10

3.1.3 Disconnection of connectors (Wires)

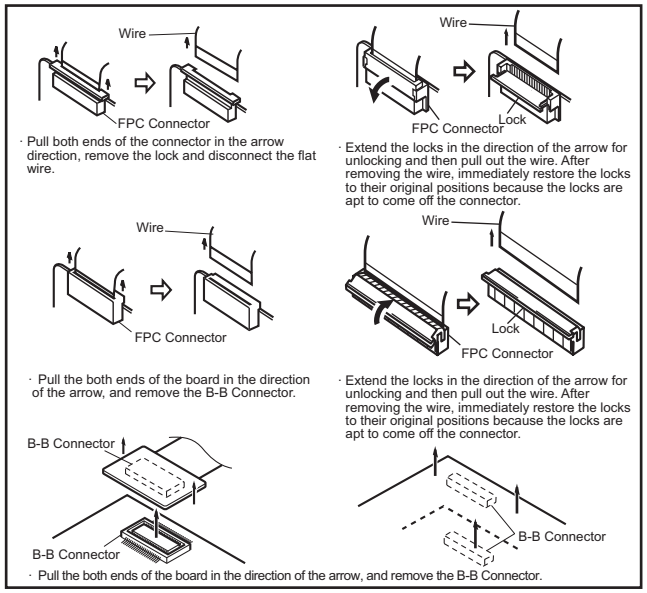

Wire
FPC Connector
· Pull both ends of the connector in the arrow direction, remove the lock and disconnect the flat wire.
Wire
FPC Connector
Lock
· Extend the locks in the direction of the arrow for unlocking and then pull out the wire. After removing the wire, immediately restore the locks to their original positions because the locks are apt to come off the connector.
Wire
FPC Connector
· Pull the both ends of the board in the direction of the arrow, and remove the B-B Connector.
Wire
Lock
FPC Connector
· Extend the locks in the direction of the arrow for unlocking and then pull out the wire. After removing the wire, immediately restore the locks to their original positions because the locks are apt to come off the connector.
B-B Connector
B-B Connector
B-B Connector
· Pull the both ends of the board in the direction of the arrow, and remove the B-B Connector.

Fig.3-1-1

3.1.4 Tools required for disassembly and assembly

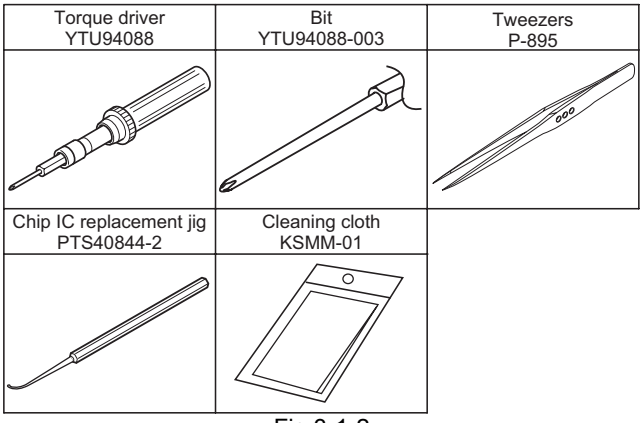


Fig.3-1-2

- **Torque driver**
  Be sure to use to fastening the mechanism and exterior parts because those parts must strictly be controlled for tightening torque.
- **Bit**
  This bit is slightly longer than those set in conventional torque drivers.
- **Tweezers**
  To be used for removing and installing parts and wires.
- **Chip IC replacement jig**
  To be used for replacement of IC.
- **Cleaning cloth**
  Recommended cleaning cloth to wipe down the video heads, mechanism (tape transport system), optical lens surface.

3.2 ASSEMBLY AND DISASSEMBLY OF MAIN PARTS

3.2.1 Assembly and disassembly

When reassembling, perform the step(s) in reverse order.

STEP No.	PART	Fig. No.	POINT	NOTE
[1]	TOP COVER ASSY	C1	4(S1a), 3(L1a),CN1a	-
[2]	UPPER ASSY (Inc. VF ASSY, SPEAKER/MONITOR)	C2-1	(S2a),2(S2b),3(S2c) 2(SD1a), L2,CN2a,b	-
[8]	E.VF UNIT(B/W)	C2-2	2(S8),L8,CN8a	NOTE 8
(∗1)	(∗2)	(∗3)	(∗4)	(∗5)

(∗1) Order of steps in Procedure
When reassembling, preform the step(s) in the reverseorder. These numbers are also used as the identification (location) No. of parts Figures.
(∗2) Part to be removed or installed.
(∗3) Fig. No. showing Procedure or Part Location.
(∗4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
S = Screw L = Lock, Release, Hook
SD = Solder CN = Connector

[Example]

- 4 (S1a) = Remove 4 S1a screws.
- 3 (L1a) = Disengage 3 L1a hooks.
- 2 (SD1a) = Unsolder 2 SD1a points.
- CN1a = Remove a CN1a connector.

(∗5) Adjustment information for installation.

3.2.2 ASSEMBLY/DISASSEMBLY OF CABINET PARTS AND ELECTRICAL PARTS

●Disassembly procedure

STEP No.	PART	Fig. No.	POINT	NOTE
[1]	COVER(JIG CON)	FA1	S1a,S1b,JACK COVER(DV)	NOTE1a,b,c
[2]	COVER(TOP) ASSY		S2,L2	-
[3]	SHOE	FA2	3(S3)	-
[4]	CENTER COVER		4(S4),L4	NOTE4
[5]	REAR COVER ASSY	FA3	3(S5a),S5b,S5c,S5d,L5a,L5b,CN5	NOTE5
[6]	FRONT COVER(N-MG)ASSY	FA4	2(S6a),3(S6b),CN6	NOTE6a,b
[7]	MIC ASSY		2(S7),BKT(FRONT)	NOTE7
[8]	UPPER CASE ASSY	FA5	S8a,S8b,2(S8c),CN8,L8a,L8b	NOTE8
[9]	OP FRAME ASSY	FA6	2(S9),CN9a,CN9b	-
[10]	LOWER ASSY	FA7	CN10a,CN10b,CN10c,4(S10)	NOTE10a,b,c
[11]	COVER(FRONT) ASSY	FA8	3(S11a),S11b,JACK COVER(MIC)	NOTE11a,b,c
[12]	FRONT BOARD ASSY		S12,L12a,L12b	NOTE12
[13]	MAIN BOARD ASSY	FA9	3(S13a),2(L13a),SHIELD PLATE, CN13a,b,c,S13b	NOTE13a,b
[14]	MDA BOARD ASSY	FA10-1	CN14a,b,c,d,2(S14)	-
[15]	MECHA(B) ASSY	FA10-2	S15a,BKT(PRE-REC),3(S15b), BKT(MECHA) ASSY	NOTE15

NOTE1a:
During the procedure, leave the CASSETTE COVER (C. COVER) open.

NOTE1b:
When removing the screw No.2, leave the JACK COVER (DV) open. Be careful in handling the JACK COVER (DV), as it comes off together when disassembling.

NOTE1c:
When removing the JACK COVER (DV), leave the VF ASSEMBLY pulled out.

NOTE4:
During the procedure, leave the CASSETTE COVER (C. COVER) open.

NOTE5:
When removing the screw No.15, leave the JACK COVER (DC) open.

NOTE6a:
During the procedure, be careful not to break the MAIN BOARD parts.

NOTE6b:
When attaching the screw No.20, be careful not to damage the FFC.

NOTE7:
When attaching, be careful with the wiring..

NOTE8:
During the procedure, leave the CASSETTE COVER (C. COVER) open.

NOTE10a:
As the screw No.31 is located under the connector (CN10a), pull out the connector first, before removing the screw.

NOTE10b:
During the procedure, be careful in handling the HEAT SINK1.

NOTE10c:
When attaching, be careful with the wiring.

NOTE11a:
During the procedure, remove the GRIP BELT.

NOTE11b:
During the procedure, leave the CASSETTE COVER (C. COVER) open.

NOTE11c:
When disassembling, be careful in handling the JACK COVER (MIC) as it comes off together.

NOTE12:
During the procedure, be careful not to break the EJECT SW.

NOTE13a:
During the procedure, be careful in handling the HEAT SINK1.

NOTE13b:
Be careful with the wiring and the handling of the wire.
Pay special attention for the wire folding position.

NOTE15:
When attaching, be careful not to catch the FPC in between.

●Destination of connectors

CN.NO.	CONNECTOR					PIN NO.
CN5	MAIN	CN103	⇔	REAR	CN501	40
CN6	MAIN	CN114	↔	MIC	-	4
CN8	MAIN	CN105	⇔	MONI.OPE	CN601	45
CN9a	MAIN	CN102	⇔	OP BLOCK	-	22
CN9b	MAIN	CN101	⇔	CCD	CN5001	20
CN10a	MAIN	CN107	⇔	FRONT	CN401	16
CN10b	MAIN	CN108	⇔	CAMERA OPE	-	14
CN10c	MAIN	CN112	↔	SPEAKER	-	2
CN13a	MAIN	CN104	⇔	MDA	CN305	30
CN13b	MAIN	CN106	⇔	SENSOR	-	16
CN13c	MAIN	CN109	⇔	HEAD	-	8
CN14a	MDA	CN304	⇔	LOADING MOTOR	-	6
CN14b	MDA	CN303	⇔	ROTARY ENCORDER SW	-	6
CN14c	MDA	CN302	⇔	DRUM MOTOR	-	11
CN14d	MDA	CN301	⇔	CAPSTAN MOTOR	-	18

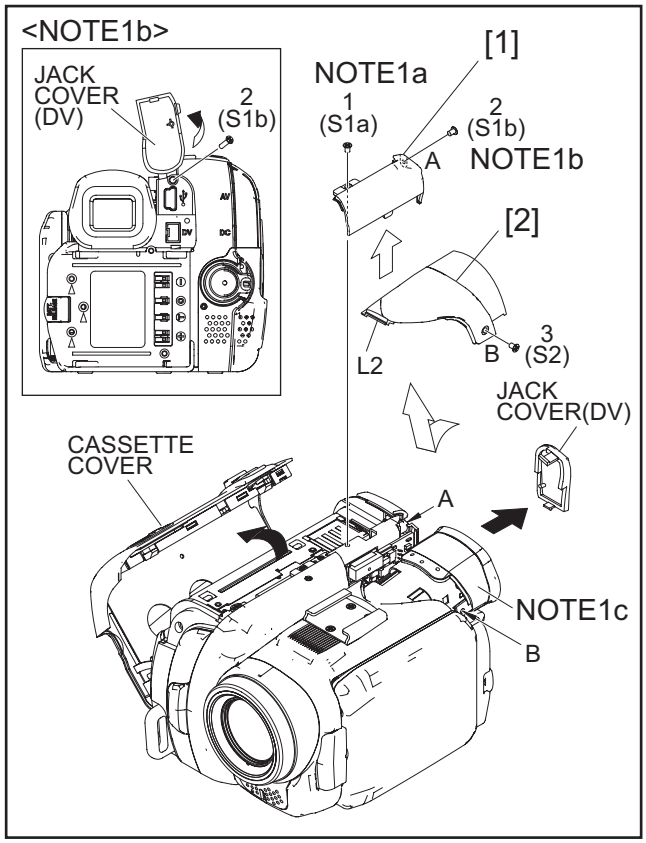


Fig.FA1

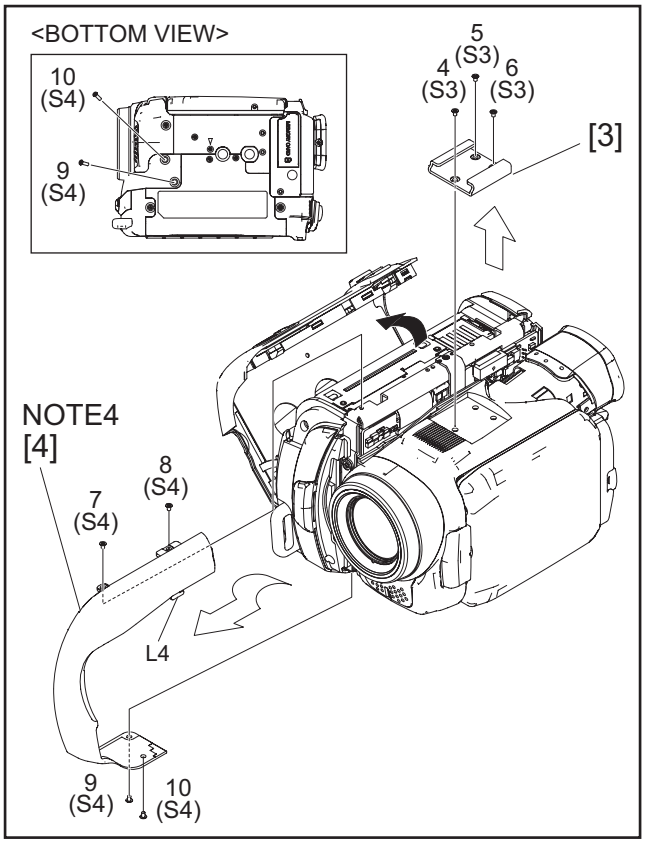


Fig.FA2

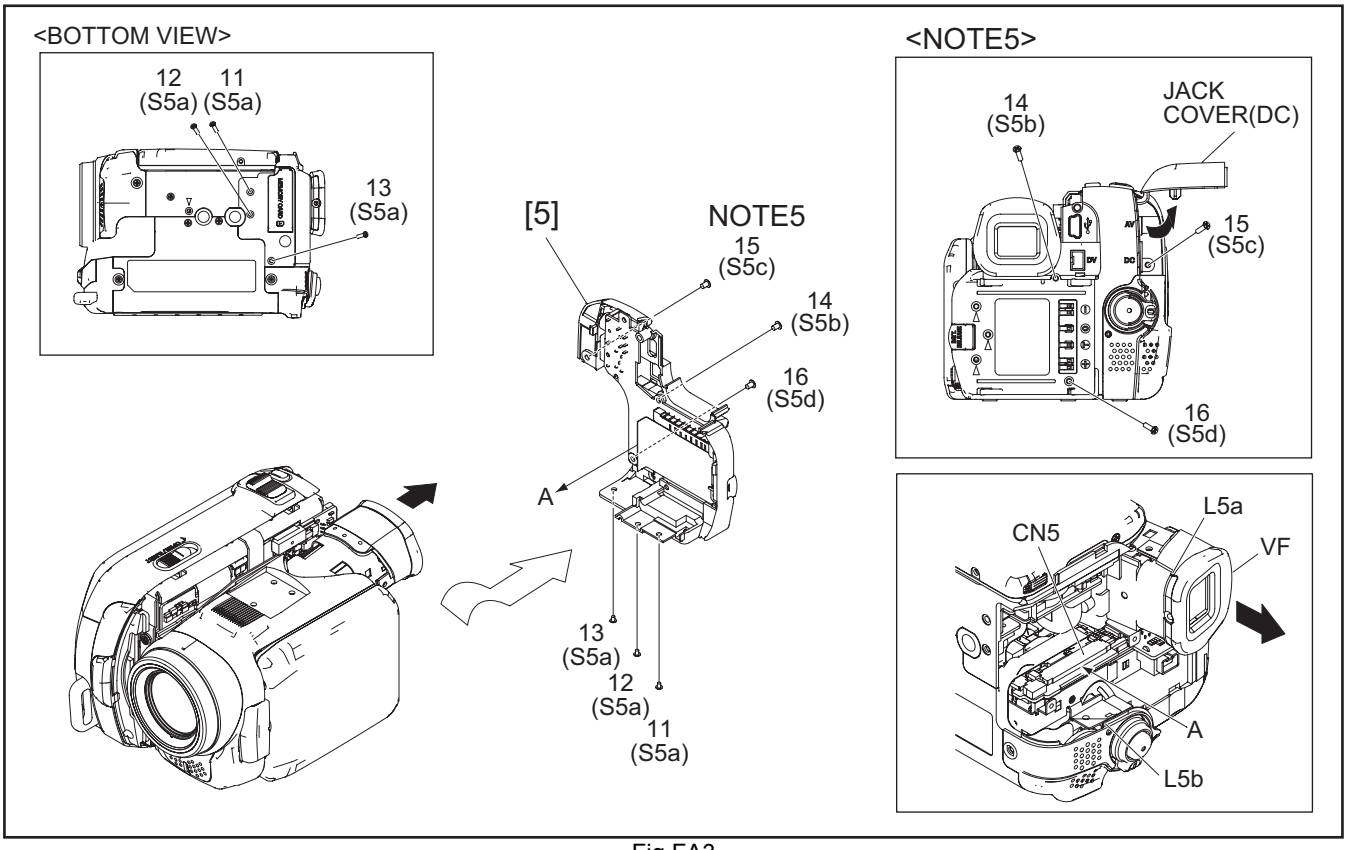


Fig.FA3

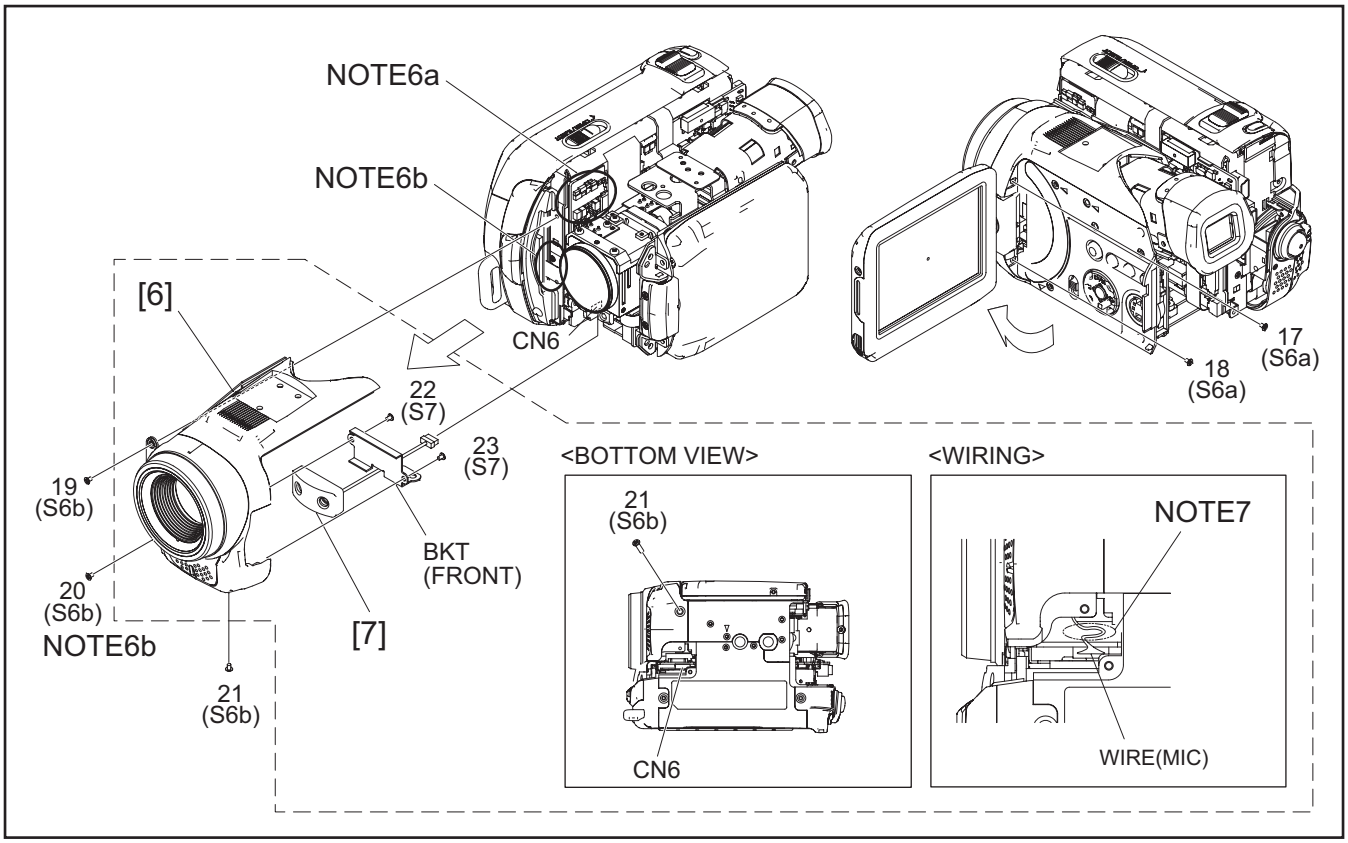


Fig.FA4

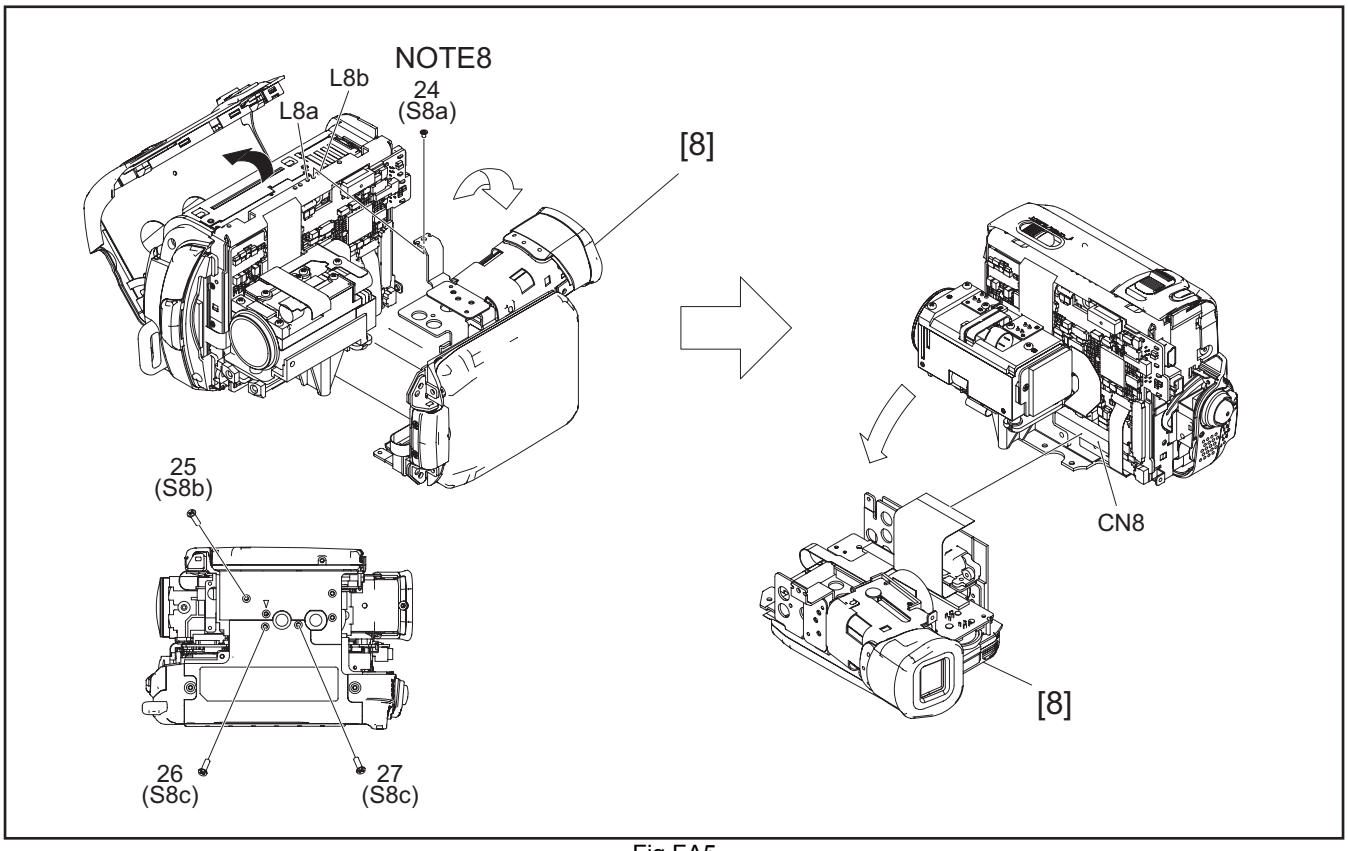


Fig.FA5

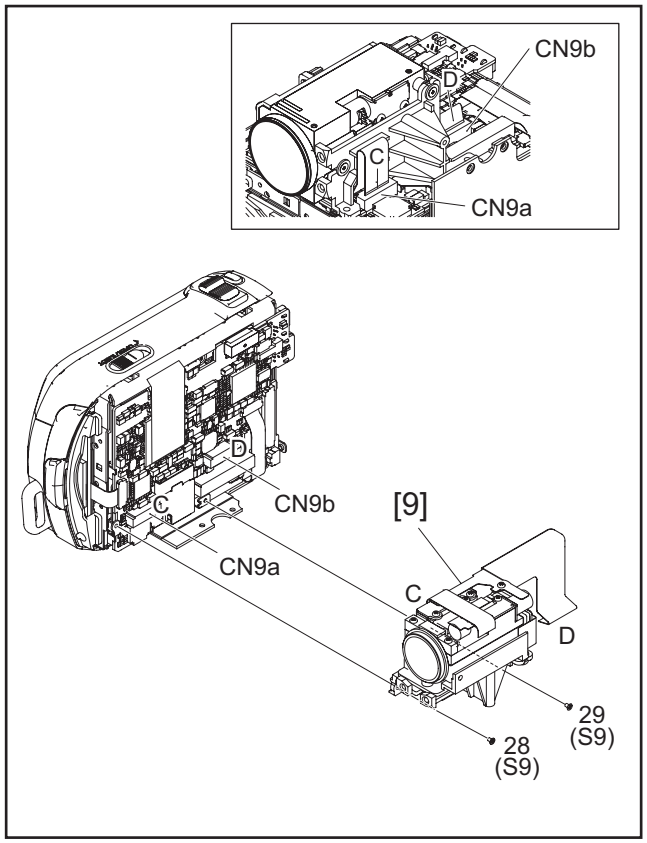


Fig.FA6

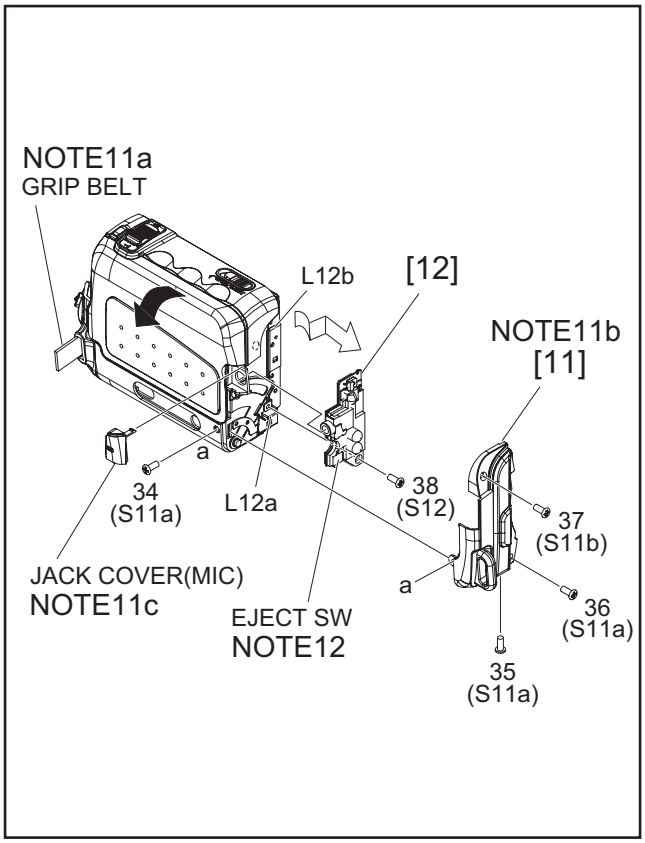


Fig.FA8

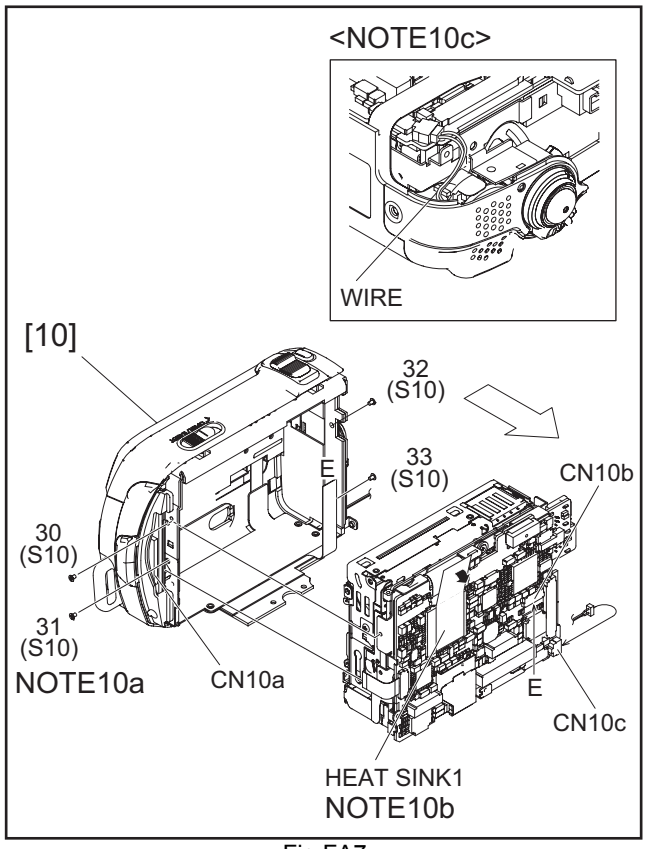


Fig.FA7

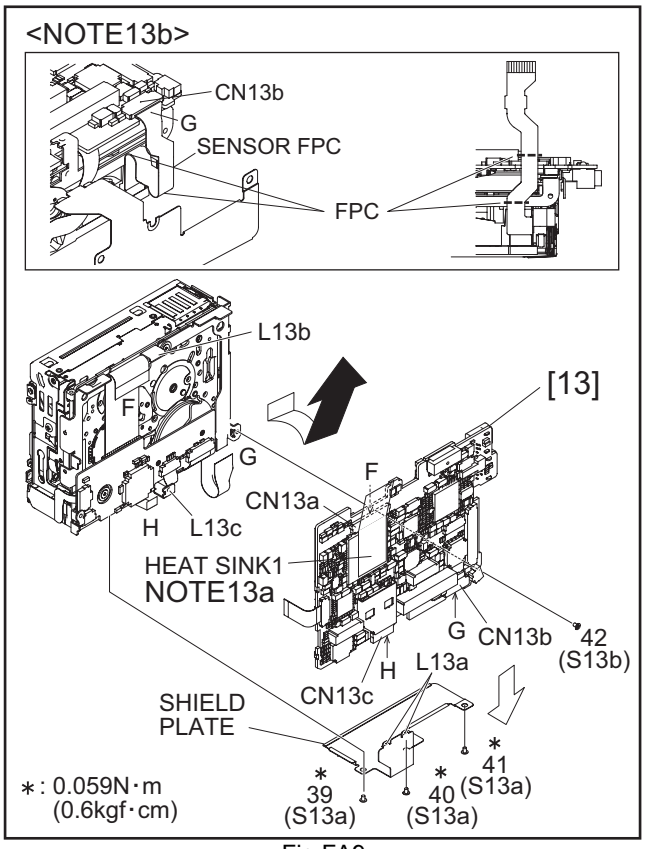


Fig.FA9

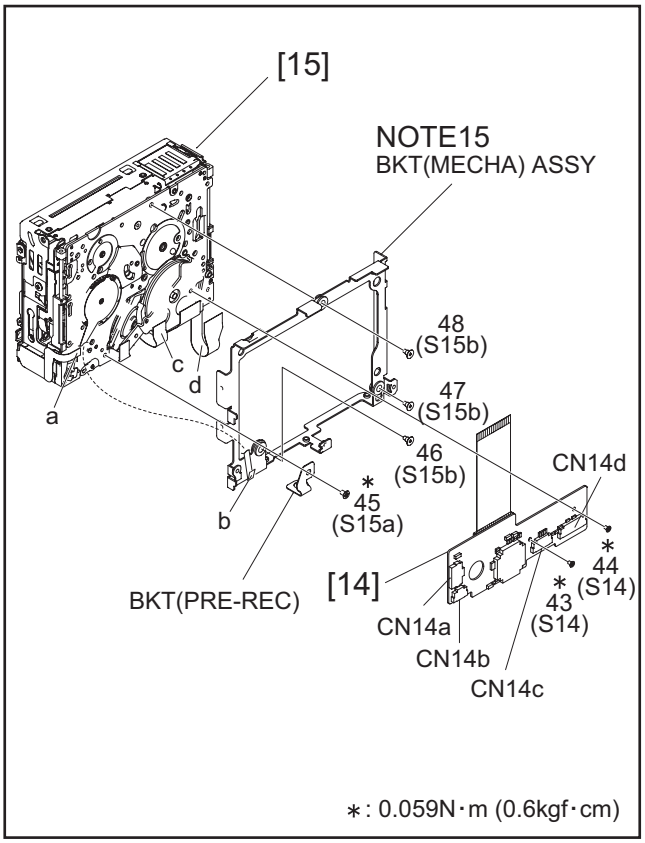


Fig.FA10-1

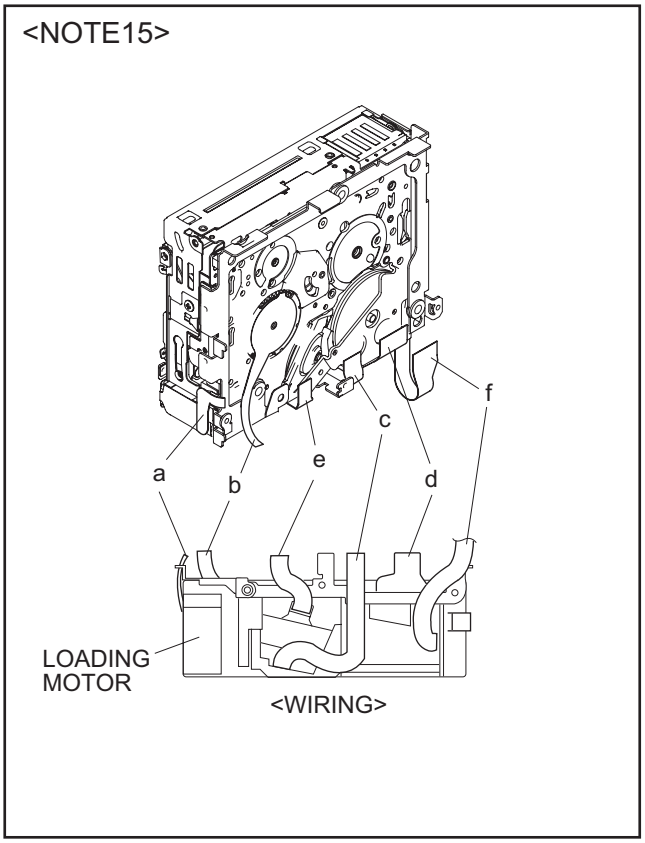


Fig.FA10-2

3.2.3 DISASSEMBLY of [8] UPPER ASSEMBLY

● **[16] Removing VF ASSEMBLY**

(1) Remove the FPC from the connector (CN8a).
(2) Remove the three screws (1-3), and remove the VF ASSEMBLY.

NOTE8a:
During the procedure, be careful not to break the FPC.

● **[17] Removing MONITOR ASSEMBLY**

(1) Remove the screw (4).
(2) Remove the connector (CN8b), and remove the FPC.
(3) Remove the two screws (5, 6), and remove the MONITOR ASSEMBLY.

NOTE8b:
During the procedure, be careful not to break the FPC.

● **[18] Removing MONITOR OPERATION BOARD ASSEMBLY**

(1) Remove the five screws (7-11), and remove the MONITOR OPERATION BOARD ASSEMBLY.

NOTE8c:
When removing, be careful in handling the parts (BUTTON (SET), KNOB(VIDEO/DSC)).

NOTE8d:
When attaching, be careful with the positions and the directions of the parts.
After attachment, make sure to perform a SLIDE SWITCH operation check.

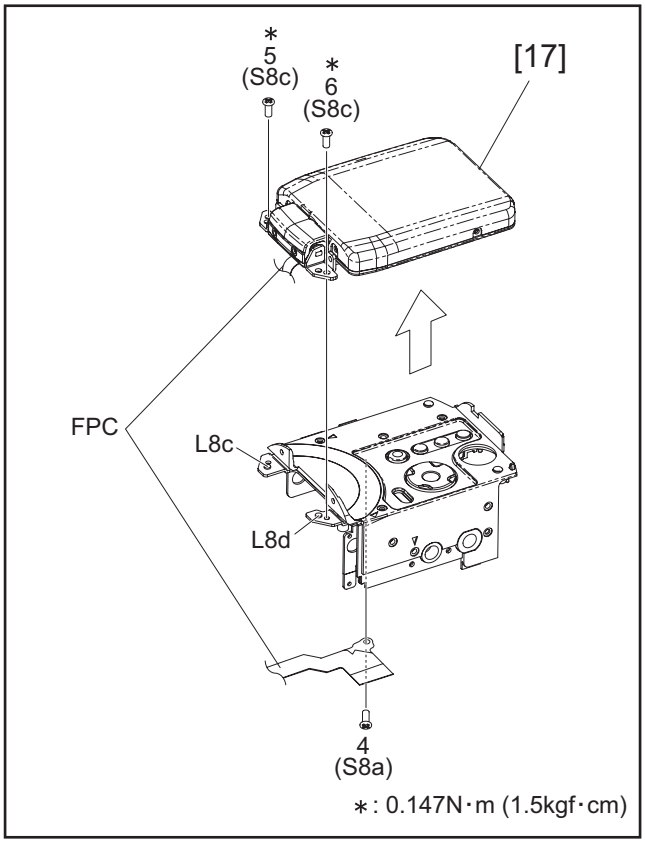


Fig.U2

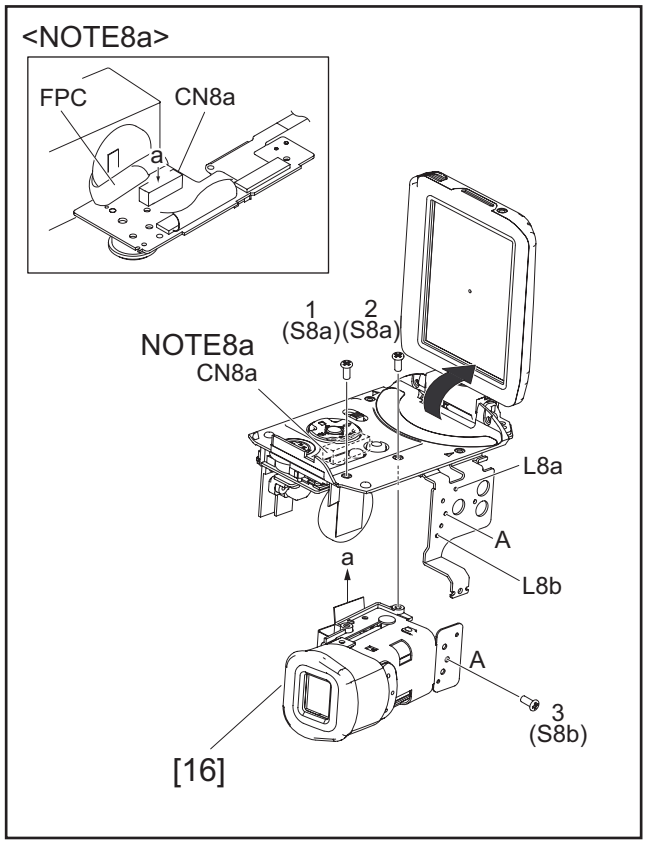


Fig.U1

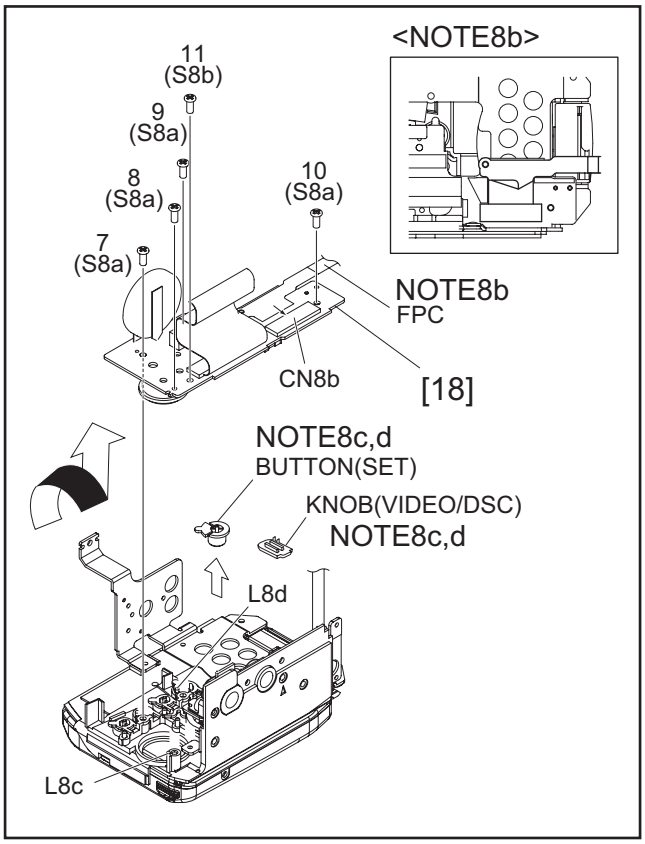


Fig.U3

3.2.4 DISASSEMBLY of [9] OP BLOCK ASSMBLY/CCD BOARD ASSEMBLY

●CAUTIONS

(1) During the procedure, be careful in handling the CCD IMAGE SENSOR, OP LPF, and lens components.
Pay special attention not to soil, dust, or scratch the surfaces
If the surfaces are soiled with fingerprints and others, they should be wiped away using silicon paper, clean chamois or cleaning cloths.

(2) The CCD IMAGE SENSOR may be shipped with a protective seal attached to the transmitting glass.
When replacing the CCD IMAGE SENSOR, do not peel off the protective seal from the new part until immediately before it is mounted in the OP BLOCK ASSEMBLY.

(3) The attachment direction of the OP LPF is so important for installation that there may be a marking. Be careful when removing the OP LPF, and make sure to attach it exactly as same as its original status.

●Disassembly of OP BLOCK ASSEMBLY/ CCD BOARD ASSEMBLY

(1) Remove the three screws (1-3), and remove the BKT (OP) ASSEMBLY.

(2) Remove the HEAT SINK2.

(3) Remove the two screws (4,5), and remove the CCD BOARD ASSEMBLY together with CCD BASE ASSEMBLY.

(4) Remove the LPF HOLDER from the CCD BASE ASSEMBLY, and remove the MASK.

NOTE 9a:
Since the MASK is between the LPF HOLDER and CCD IMAGE SENSOR, be careful in handling the MASK.

NOTE9b:
In removing the CCD IMAGE SENSOR, unsolder the fourteen soldered parts (SD9a), and remove the CCD BASE ASSEMBLY from the CCD BOARD ASSEMBLY.
In replacing the CCD IMAGE SENSOR, don't remove the CCD IMAGE SENSOR from the CCD BASE ASSEMBLY. Instead, replace the whole CCD BASE ASSEMBLY.

NOTE9c:
Since the OP LPF is inside the LPF HOLDER and the OP LPF is attached to the LPF HOLDER by using the SHEET, remove the OP LPF from the LPF HOLDER if necessary.
In removing the OP LPF from the LPF HOLDER, be careful not to damage the LPF HOLDER, and remove the SHEET carefully if you want to use the same SHEET in attachment procedure.

NOTE9d:
In removing the OP LPF, be careful of the direction of its attachment. Since one side of the OP LPF is coated for the purpose of protection, attach the OP LPF so that the coated side faces the OP lens (a subject of photograph).

●Replacement of service repair parts

The service repair parts for the OP BLOCK ASSEMBLY are as listed below.
When replacing the parts, pay special attention not to cut/ damage the FPC or not to cause any damage by soldering (excessive heating).

(1) FOCUS MOTOR UNIT
(2) ZOOM MOTOR UNIT
(3) AUTO IRIS UNIT

NOTE9e:
When replacing the FOCUS MOTOR UNIT or the ZOOM MOTOR UNIT, solder the FPC at a space of about 0.5 mm above the terminal pin.

NOTE9f:
The AUTO IRIS UNIT includes the FPC ASSEMBLY and two SENSORS.

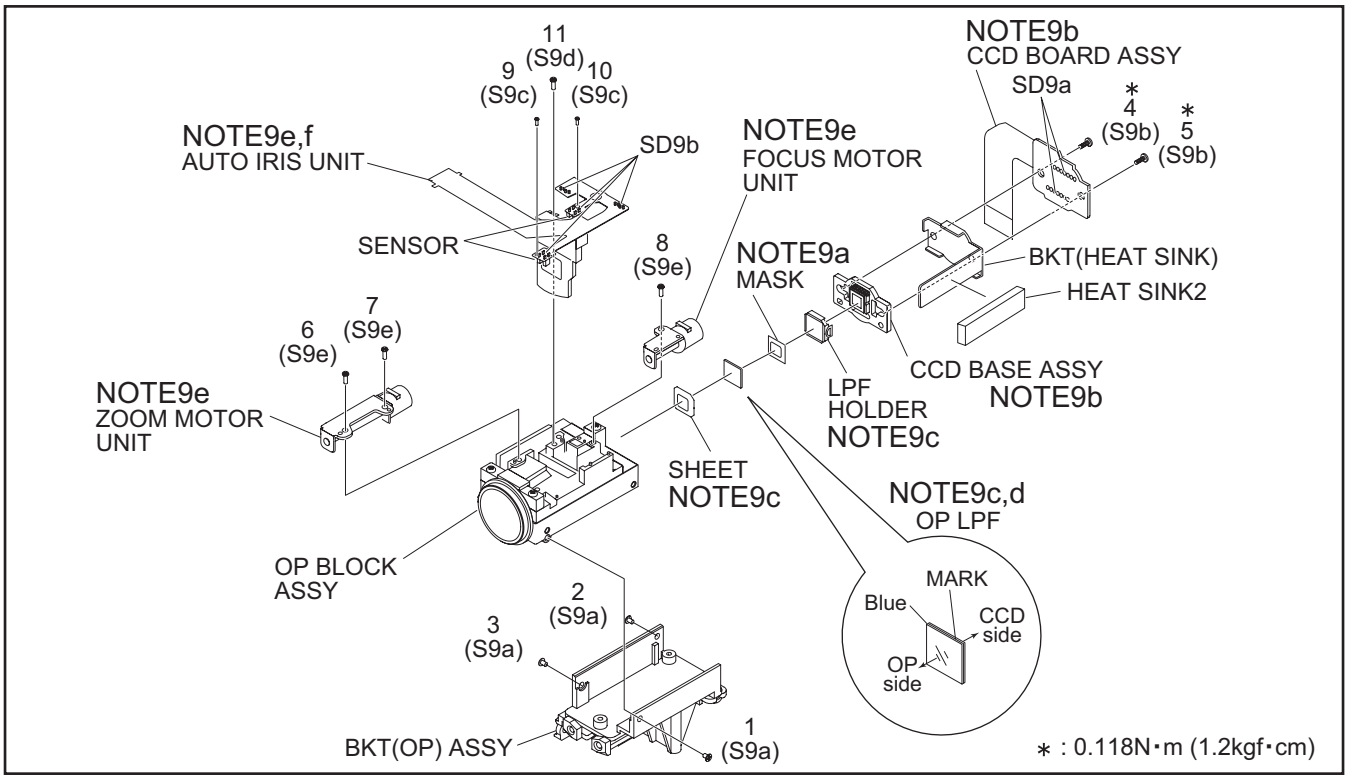


Fig.3-2-4

3.2.5 DISASSMBLY of [16] VF ASSEMBLY

●Before disassembly

As the VF ASSEMBLY has complicated structure, do not disassemble if not needed.

Inside the VF is divided into two units: LCD ASSEMBY / LENS ASSEMBY, and each unit is made up of several parts. Disassemble the VF ASSEMBLY if necessary.

When assembling, pay special attention not to allow foreign materials (dusts etc.) commingling inside, and not to soil the LENS or the SHEET.

●Disassembly of the CABINET PARTS

(1) Remove the four screws (1-4), and remove the GUIDE (VF).

NOTE16a:

When removing, be careful not to damage the hooks.

NOTE16b:

Be careful in handling the GUIDE (VF) as there is grease applied inside.

(2) Remove the screw (5), and remove the PLATE (CLICK).

(3) Remove the screw (6), and remove the HOLDER (EYE CAP) and the EYE CAP.

(4) Pull out the VF ASSEMBLY then remove the screw (7), and free the FPC.

NOTE16c:

During the procedure, be careful not to cut/ damage the FPC.

(5) Peel off and remove the FPC which is affixed to the back of the HOLDER (SW).

(6) Remove the two hooks (L16k, m) from both sides, and remove the UPPER CASE (VF).

NOTE16d:

When attaching, be careful with the positions of the KNOB (ADJ) and the LENS ASSY. Make sure to check the slide operation.

(7) Remove the FPC from the CASE (LOWER) to free the FPC, and remove the LCD ASSEMBY/LENS ASSEMBLY.

NOTE16e:

During the procedure, be careful not to cut/ damage the FPC.

NOTE16f:

When attaching, be careful in handling the FPC.

(8) Remove the connector (CN16) and the hook (L16p, q), and remove the VF BOARD ASSEMBLY.

NOTE16g:

When removing, be careful not to damage the hooks.

●Disassembly of LCD SA/LENS SA

Refer to the Fig.VF4 for the disassembly of the LCD ASSEMBLY, and disassemble if needed.

NOTE16h:

During the procedure, be careful in handling the parts.

Pay special attention not to damage, soil, or leave fingerprints on the surface.

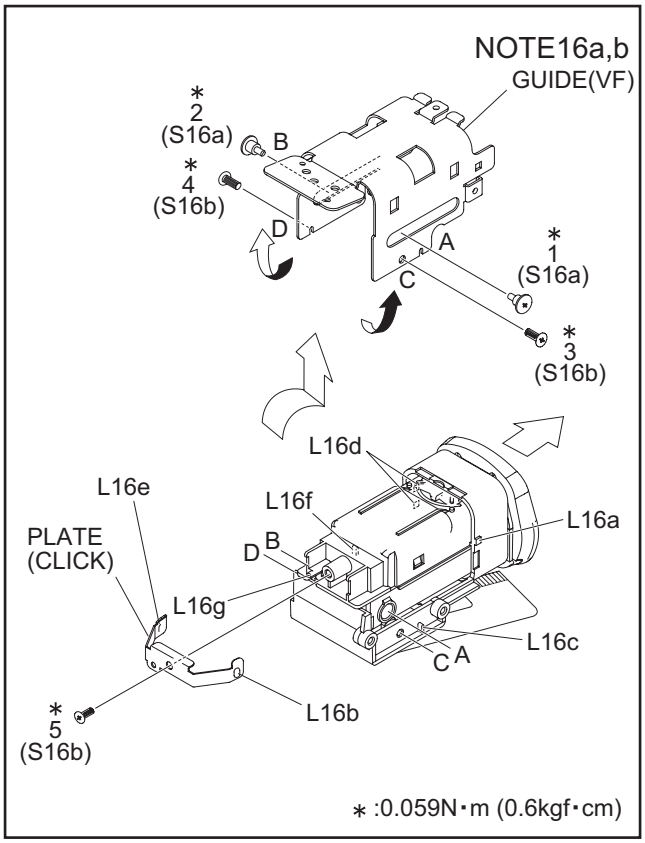


Fig.VF1

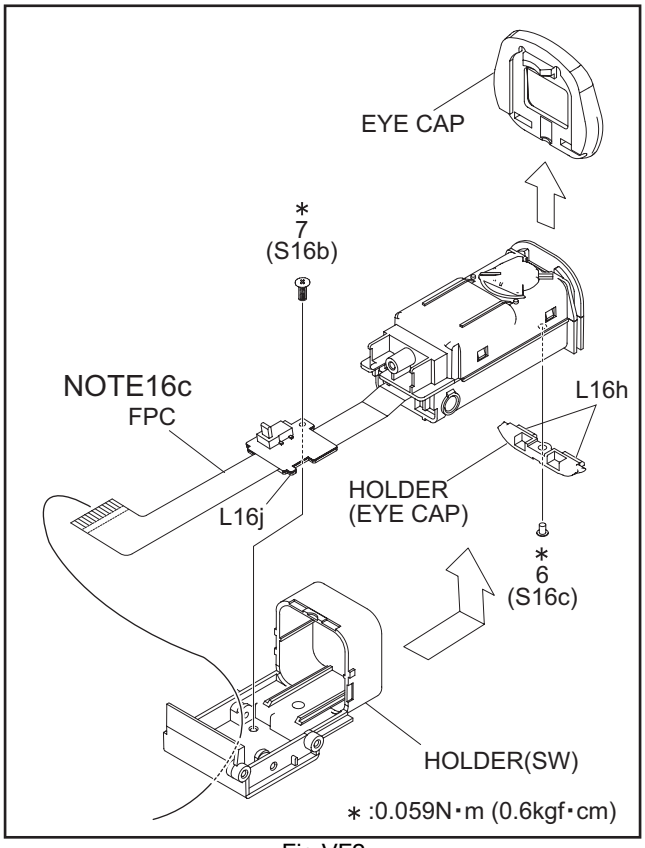


Fig.VF2

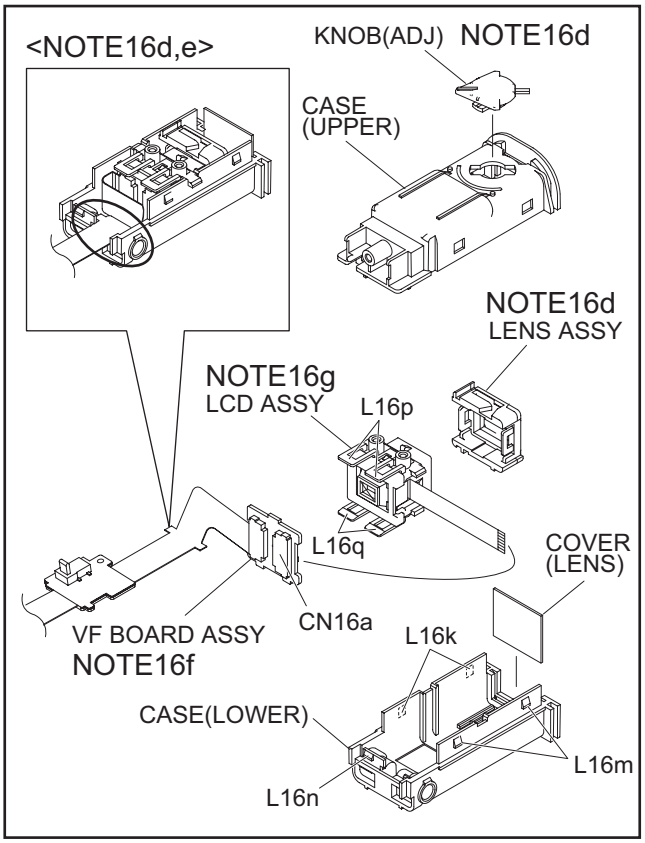


Fig.VF3

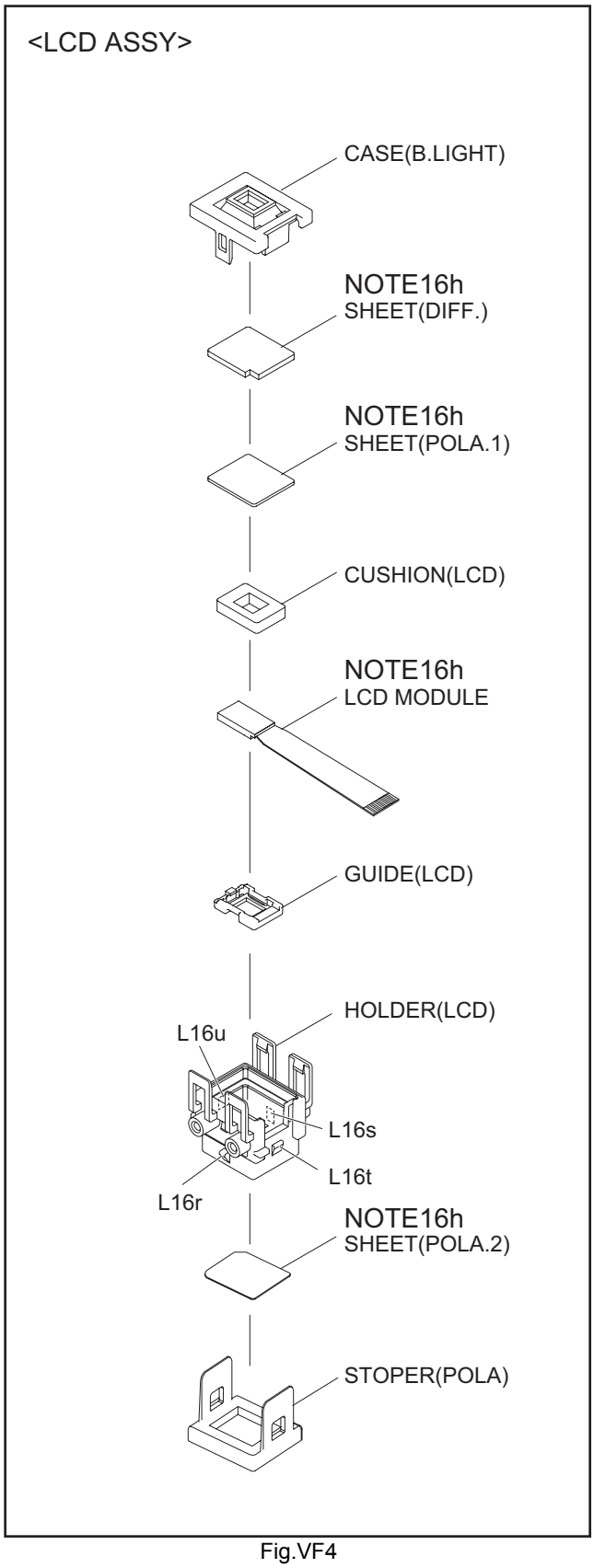


Fig.VF4

3.2.6 DISASSEMBLY of [17] MONITOR ASSEMBLY

●Disassembly of MONITOR ASSEMBLY

(1) Remove the three screws (1-4), and remove the MONITOR COVER ASSEMBLY by disengaging the five hooks (L17a-e).

NOTE17a:

When removing, be careful not to damage the hooks.

(2) Pull out the U/D SWITCH BOARD from the MONITOR CASE ASSEMBLY.

NOTE17b:

When attaching, make sure to place the FPC over the HINGE ASSEMBLY, and set it in the slot of the MONITOR CASE.

(3) Release the lock of the connector(CN17a,b), and remove the HINGE ASSEMBLY by pulling it up.

NOTE17c:

During the procedure, be careful in handling the FPC. When attaching, make sure to place the CN17b under.

(4) Release the lock of the connector (CN17c), and pull out the FPC.

(5) Remove the screw (5).

(6) Remove the MONI BL BOARD ASSEMBLY and the BACK LIGHT together.

NOTE17d:

Since the BACKLIGHT is soldered to the BOARD ASSEMBLY (SD17), they should be removed together except for the replacement.

(7) Remove the SHEET (DIFF.) and the SHEET (BEF).

(8) Remove the LCD MODULE.

(9) Remove the BKT(LCD) ASSY.

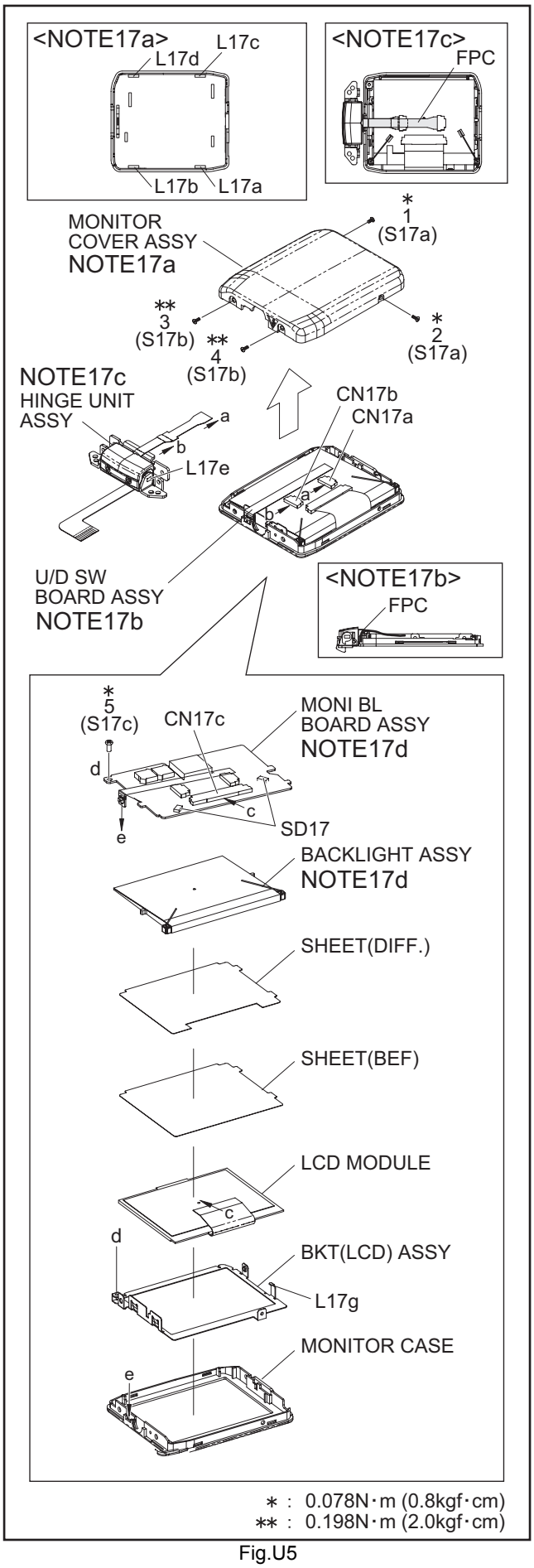


Fig.U5

SECTION 4
ADJUSTMENT

4.1 PREPARATION

4.1.1 Precaution

Camera system and deck system of this model are specially adjusted by using PC.
However, if parts such as the following are replaced, an adjustment is required. The adjustment must be performed in a Service Center equipped with the concerned facilities.

- OP BLOCK ASSEMBLY
- VF ASSEMBLY
- MONITOR ASSEMBLY
- EEP ROM (IC1005 of MAIN board)

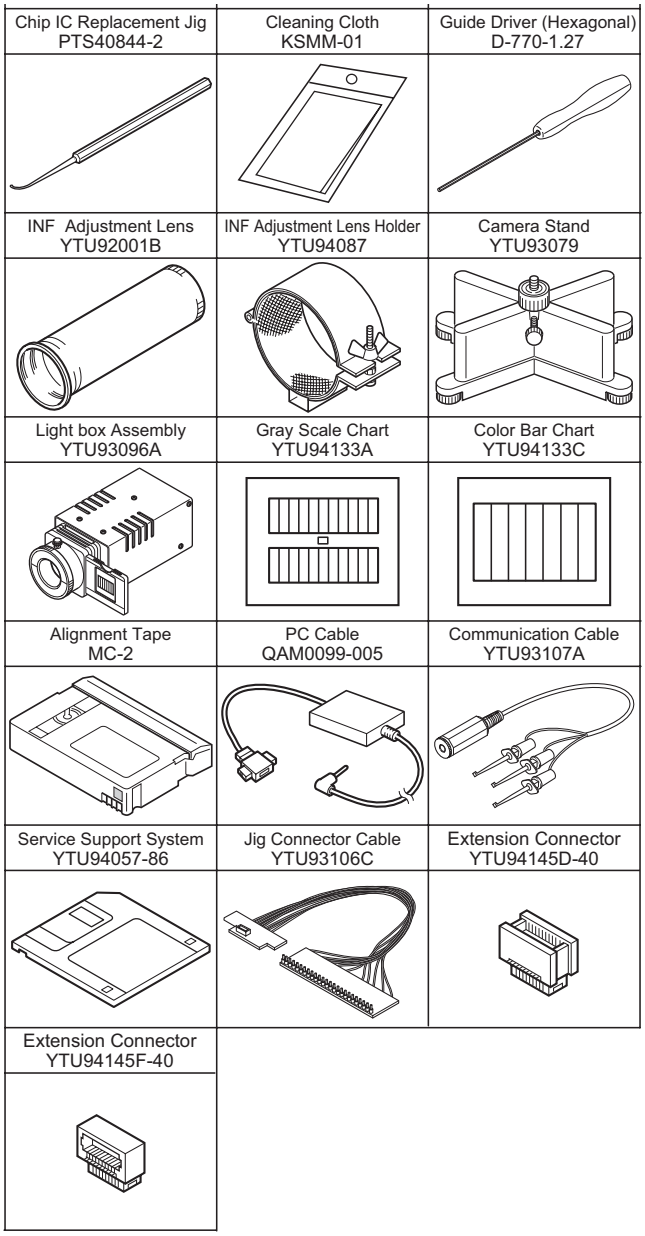
In the event of malfunction with electrical circuits, first find a defective portion with the aid of proper test instruments as shown in the following electrical adjustment procedure, and then commence necessary repair/ replacement/adjustment.

- In observing chip TP, use IC clips, etc. to avoid any stress. Prior to replacement of chip parts (especially IC), remove the solder completely to prevent peeling of the pattern.
- Use a patch cord if necessary. As for a patch cord, see the BOARD INTERCONNECTIONS.
- Since connectors are fragile, carefully handle them in disconnecting and connecting the FPC.

4.1.2 REQUIRED TEST EQUIPMENT

- Personal computer (for Windows)
- Color TV monitor
- Oscilloscope (dual-trace type, observable 100MHz or higher frequency). The one observable 300 MHz or higher frequency is recommended.
- Digital voltmeter
- DC power supply or AC adapter
- Frequency counter (with threshold level adjuster)

4.1.3 TOOLS REQUIRED FOR ADJUSTMENT



- **Chip IC replacement jig**
  To be used for adjustment of the camera system.
- **Cleaning cloth**
  Recommended the Cleaning cloth to wipe down the video heads, mechanism (tape transport system), optical lens surface.
- **Guide driver (Hexagonal)**
  To be used to turn the guide roller to adjustment of the linarity of playback envelope.
- **INF adjustment lens**
  To be used for adjustment of the camera system. For the usage of the INF adjustment lens, refer to the Service Bulletin No. YA-SB-10035.
- **INF adjustment lens holder**
  To be used together with the Camera stand for operating the Videocamera in the stripped-down condition such as the sta-

tus without the exterior parts or for using commodities that are not yet conformable to the interchangeable ring. For the usage of the INF lens holder, refer to the Service Bulletin No. YA-SB-10035.

- **Camera stand**
  To be used together with the INF adjustment lens holder. For the usage of the Camera stand, refer to the Service Bulletin No. YA-SB-10035.
- **Light box assembly**
  To be used for adjustment of the camera system. For the usage of the Light box assembly, refer to the Service Bulletin No. YA-SB-10035.
- **Gray scale chart**
  To be used for adjustment of the camera system. For the usage of the INF adjustment lens, refer to the Service Bulletin No. YA-SB-10035.
- **Color bar chart**
  To be used for adjustment of the camera system. For the usage of the INF adjustment lens, refer to the Service Bulletin No. YA-SB-10035.
- **Alignment tape**
  To be used for check and adjustment of interchangeability of the mechanism.
- **PC cable**
  To be used to connect the Videocamera and a personal computer with each other when a personal computer issued for adjustment.
- **Communication cable**
  Connect the Communication cable between the PC cable and Jig connector cable when performing a PC adjustment.
- **Service support system**
  To be used for adjustment with a personal computer. Software can be downloaded also from JS-net.
- **Jig connector cable**
  Connected to JIG CONNECTOR of the main board and used for electrical adjustment, etc.
- **Extension connector**
  Connect this extension connector to the connector of the Jig connector cable for extending the cable connector.

4.2 JIG CONNECTOR CABLE CONNECTION

■ **Connection procedure**

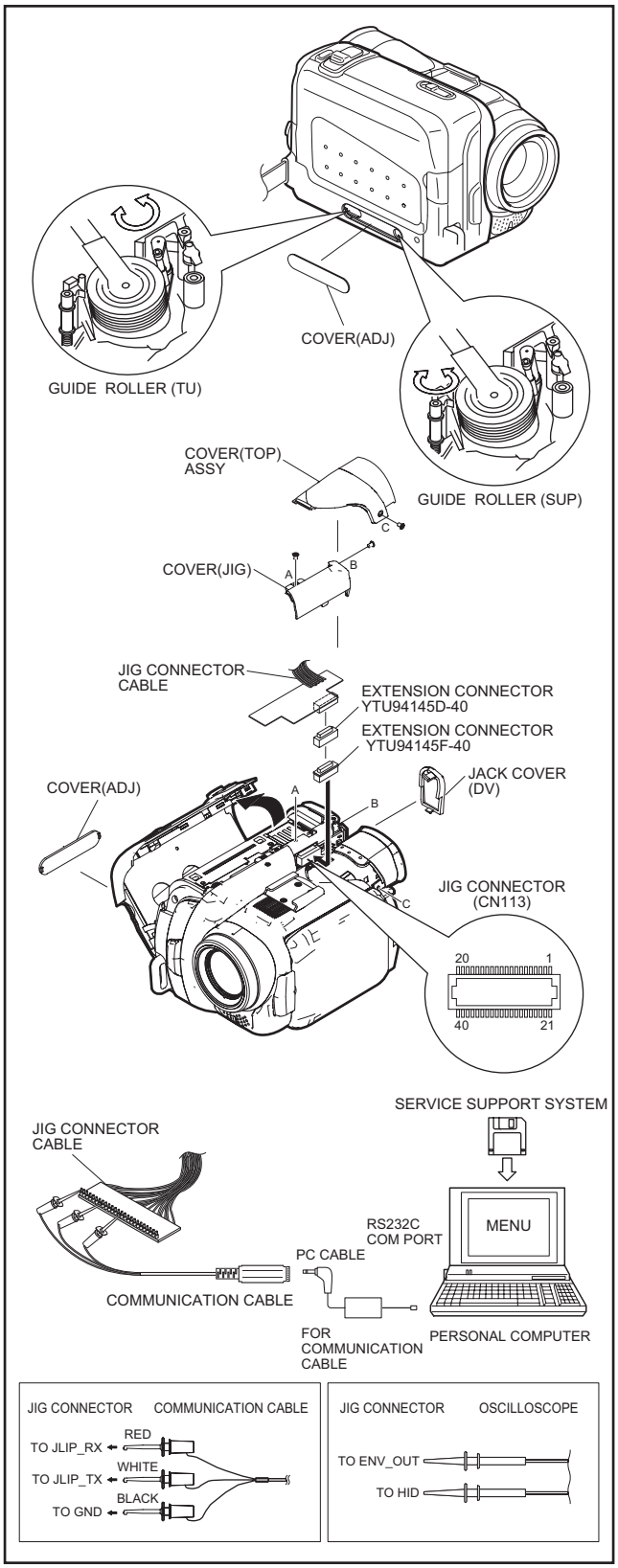


Fig.4-2-1

■ **Jig connector diagrams**

JIG CONNECTOR CABLE (YTU93106C)

MAIN CN113

EXMOD_1	1		
SYS_TMS		21	
SYS_TCK	2		
SYS_TDI		22	
SYS_TRSTL	3		
SYS_TDO		23	
SYS_RSTL	4		
AL_3VSYS		24	
IF_TX	5		
JLIP_TX		25	
JLIP_RX	6		
TXD2		26	
RXD2	7		
NC		27	
I_MTR	8		
NC		28	
NC	9		
ENV_OUT		29	
MAIN_VCO	10		
ATFI		30	
HID	11		
DISCRI		31	
FS_PLL	12		
HST		32	
MON_B	13		
NC		33	
MON_G	14		
GND		34	
GND	15		
V_OUT		35	
NC	16		
CVF_B		36	
CVF_R	17		
CVF_G		37	
GND	18		
NC		38	
NC	19		
DSC_DBG		39	
KENTO	20		
MVD		40	

NOTE:
The JIG connector board uses 30 pins from among 40 pins of CN113 on the MAIN board.
Pins 1 to 5, 21 to 24 and 34 of CN113 on the MAIN board are not used

JIG CONN. BOARD (PIN NO.)

6	JLIP_RX
7	RXD2
8	I_MTR
9	NC
10	MAIN_VCO
11	HID
12	FS_PLL
13	MON_B
14	MON_G
15	GND
16	NC
17	CVF_R
18	GND
19	NC
20	KENTO
25	JLIP_TX
26	TXD2
27	NC
28	NC
29	ENV_OUT
30	ATFI
31	DISCRI
32	HST
33	NC
35	V_OUT
36	CVF_B
37	CVF_G
38	NC
39	DSC_DBG
40	MVD

Fig.4-2-2

4.3 MECHANISM COMPATIBILITY ADJUSTMENT

4.3.1 Tape pattern adjustment

NOTE:

Prior to the adjustment, remove the COVER (ADJ).

(1) Play back the compatibility adjustment tape.
(2) While triggering the HID, observe the waveform of ENV_OUT.
(3) Set the manual tracking mode (ATF OFF).
(4) Confirm that the waveform is entirely parallel and straight, and free from remarkable level-down, through the tracking operation.
Make the confirmation as follows if necessary.
(5) If level-down is observed on the left hand side of the waveform, straighten the level by turning the GUIDE ROLLER (SUP).
If level-down is observed on the right hand side of the waveform, straighten the
level by turning the GUIDE ROLLER (TU).
For actual adjustment, first, turn both the GUIDE ROLLERS (SUP and TU) to tightening direction (clockwise) in order to misalign the waveform once.
Next, turn the GUIDE ROLLERS to returning direction (counterclockwise), then stop turning at the point where the waveform becomes flat.
Turn only the GUIDE ROLLER (SUP) further more, then stop turning at the point where the waveform starts changing.
(6) After the adjustment, try the unloading motion once, and confirm that the waveform is flat when the tape has been played back again.
(7) Play back the self-recording.
(8) Confirm that the waveform is flat.

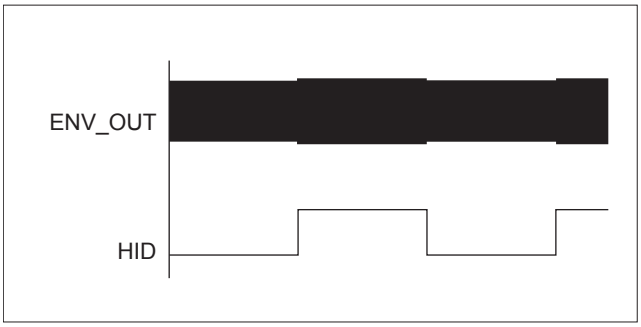


Fig.4-3-1

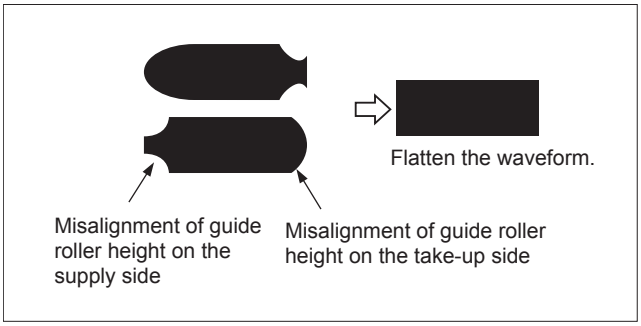

Flatten the waveform.
Misalignment of guide roller height on the supply side
Misalignment of guide roller height on the take-up side

Fig.4-3-2

4.4 ELECTRICAL ADJUSTMENT

Electrical adjustment is performed by using a personal computer and software for SERVICE SUPPORT SYSTEM. Read README.TXT file to use the software properly.
As for the connection of cables, see "4.2 JIG CONNECTOR CABLE CONNECTION".

CABINET PARTS AND ELECTRICAL PARTS(1)

Symbol No.	[1]		[2]	[3]			[4]				[5]						[6]					[7]		[8]			
Removing order of screw	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Place to stick screw	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			*	*	*			*		*	*
Reference drawing (Fig.No.)	FA1			FA2							FA3						FA4							FA5			
Screw tightening torque	a																										

CABINET PARTS AND ELECTRICAL PARTS(2)

Symbol No.	[9]		[10]				[11]				[12]	[13]				[14]		[15]				
Removing order of screw	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
Place to stick screw	*	*	*	*	*	*	*	*	*		*				*							
Reference drawing (Fig.No.)	FA5		FA7				FA8					FA9				FA10-1						
Screw tightening torque	a											b			a	b					a	

[8] UPPER CASE ASSY

	[16]			[17]			[18]				
Removing order of screw	1	2	3	4	5	6	7	8	9	10	11
Place to stick screw			*						*	*	*
Reference drawing (Fig.No.)	U1			U2			U3				
Screw tightening torque	a			c			a				

[9]OP BLOCK ASSY/CCD BOARD ASSY

	[9]											
Removing order of screw	1	2	3	4	5	6	7	8	9	10	11	12
Place to stick screw						*	*	*				
Reference drawing (Fig.No.)	3-2-4											
Screw tightening torque	a			d		a						

[16]VF ASSY

	[16]						
Removing order of screw	1	2	3	4	5	6	7
Place to stick screw							
Reference drawing (Fig.No.)	VF1					VF2	
Screw tightening torque	b					b	

[17] MONITOR ASSY

	[17]				
Removing order of screw	1	2	3	4	5
Place to stick screw	*	*	*	*	*
Reference drawing (Fig.No.)	3-2-6				
Screw tightening torque	e		f		e

NOTE:

1) * (This mark shows where to attach the screws) : Do not reuse the screws because the screw lock bond was applied to prevent the screws from loosening. Prepare the specified screws and use them in place of the removed screws.

2) Tightening torque for the screws

- There are setting limits of the torque value for the torque driver. If the value exceeds the setting value, take it as a rough measurement (reference value), and tighten the screw manually.
- The specified torque value is a recommended value of the initial assembly. Therefore, set the value below the specified torque value in the assembling procedure. Be careful not to break either the screws or the screw holes.

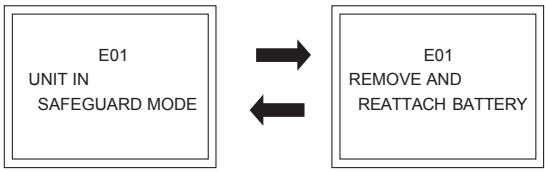
a : 0.069N·m (0.7kgf·cm) b : 0.059N·m (0.6kgf·cm) c : 0.147N·m (1.5kgf·cm) d : 0.118N·m (1.2kgf·cm) e : 0.078N·m (0.8kgf·cm)
f : 0.198N·m (2.0kgf·cm)

5.2 EMERGENCY DISPLAY

Whenever some abnormal signal is input to the syscon CPU, an error number (E01, as an example) is displayed on the LCD monitor or (in the electronic view finder).In every error status, such the message as shown below alter nately appear over and over.

- In an emergency mode, all operations except turning on/off the POWER switch are ineffectual.

Example (in case of the error number E01):



LCD display	Emergencymode	Details	Possible cause
E01	LOADING	In the case the encoder position is not shifted to the next point though the loading motor has rotated in the loading direction for 4 seconds or more. This error is defined as [E01].	1. The mechanism is locked during mode shift. 2. The mechanism is locked at the mechanism loading end, because the encoder position is skipped during mechanism mode shift. 3. No power is supplied to the loading MDA.
E02	UNLOADING	In the case the encoder position is not shifted to the next point though the loading motor has rotated in the unloading direction for 4 seconds or more. This error is defined as [E02].	1. The mechanism is locked during mode shift. 2. The mechanism is locked at the mechanism loading end, because the encoder position is skipped during mechanism mode shift.
E03	TU & SUP REEL FG	In the case no REEL FG is produced for seconds shown in the table below or more in the capstan rotation mode after loading was complete, the mechanism mode is shifted to STOP with the pinch roller set off. This error is defined as [E03].However, no REEL EMG is detected in the SLW/STILL mode. REEL(SUP) / REEL(TU) PB/REC: 3 SEC / 3 SEC S-FWD: 3 SEC / 0.3 SEC S-REW: 0.3 SEC / 3 SEC FF: 3 SEC / 0.1 SEC REW: 0.1 SEC / 3 SEC	1. The idler gear does not engage with the reel disk well. 2. Though the idler gear and reel disk are engaged with each other, the tape is not wound because of overload to the mechanism. 3. No FG pulse is output from the reel sensor. 4. No power is supplied to the reel sensor. 5. Tape transport operation takes place with a cassette having no tape inside. 6. The tape slackens and no pulse is produced until the slack is taken up and the tape comes into the normal status.
E04	DRUM FG	In the case there is no DRUM FG input in the drum rotation mode for 4 seconds or more. This error is defined as [E04], and the mechanism mode is shifted to STOP with the pinch roller set off.	1. The drum cannot be started or drum rotation is stopped because tape transport load is too high. 1) Tape tension is extremely high. 2) The tape is damaged or soiled with grease, etc. 2. The DRUM FG signal is not received by the syscon CPU. 1) Disconnection in the middle of the signal line. 2) Failure of the DRUM FG pulse generator (hall element). 3. No drum control voltage is supplied to the MDA. 4. No power is supplied to the DRUM MDA.
E05	-	-	-
E06	CAPSTAN FG	In the case no CAPSTAN FG is produced in the capstan rotation mode for 2 seconds or more. This error is defined as [E06], and the mechanism mode is shifted to STOP with the pinch roller set off.However, no CAPSTAN EMG is detected in the STILL/FF/REW mode.	1. The CAPSTAN FG signal is not received by the syscon CPU. 1) Disconnection in the middle of the signal line. 2) Failure of the CAPSTAN FG pulse generator (MR element). 2. No capstan control voltage is supplied to the MDA. 3. The capstan cannot be started or capstan rotation is stopped because tape transport load is too high. 1) Tape tension is extremely high. (Mechanical locking) 2) The tape is damaged or soiled with grease, etc. (Tape tangling occurs, etc.)

Fig.5-3-1

JVC
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AV & MULTIMEDIA COMPANY CAMCORDER CATEGORY 12, 3-chome, Moriya-cho, kanagawa-ku, Yokohama, kanagawa-prefecture, 221-8528, Japan

(No.YF087)

Printed in Japan
VPT

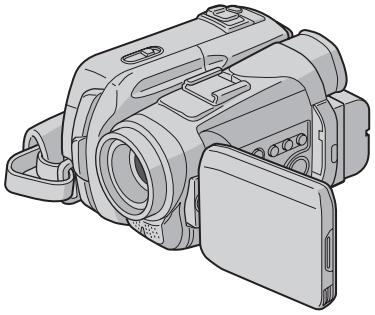
JVC

SCHEMATIC DIAGRAMS

DIGITAL VIDEO CAMERA

GR-DF420EK, GR-DF420EX, GR-DF420EY, GR-DF420EZ, GR-DF425EK, GR-DF425EG, GR-DF430EK, GR-DF460EK, GR-DF470EK, GR-DF470EX, GR-DF470EY, GR-DF470EZ

CD-ROM No.SML200503



Mini DV PAL

SD

MultiMediaCard

GR-DF420EKM, GR-DF420EXM, GR-DF420EYM, GR-DF420EZM,
GR-DF425EKM, GR-DF425EGM[M5D5S2] ,
GR-DF430EKM[M5D5S3],GR-DF460EKM[M5D5S6],
GR-DF470EKM, GR-DF470EXM GR-DF470EYM, GR-DF470EZM[M5D5S7]

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No.YF087SCH
2005/3

CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components indentified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

1) All resistance values are in ohm. 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ(1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in μF, (P: PF).
3) All inductance values are in μH, (m: mH).
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

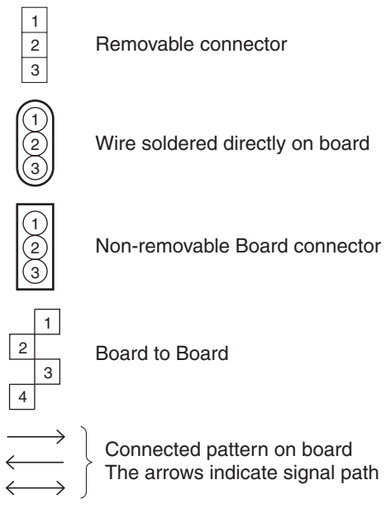
Note: The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

2. Indications of control voltage

AUX : Active at high.

$\overline{\text{AUX}}$ or AUX(L) : Active at low.

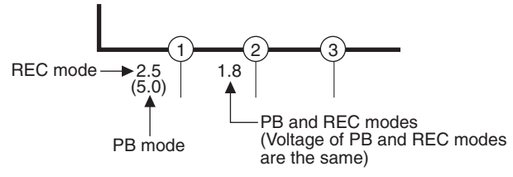
3. Interpreting Connector indications



Note: For the destination of each signal and further line connections that are cut off from the diagram, refer to "BOARD INTERCONNECTIONS"

4. Voltage measurement

1) Regulator (DC/DC CONV) circuits
   REC : Colour bar signal.
   PB : Alignment tape (Colour bar).
   — : Unmeasurable or unnecessary to measure.
2) Indication on schematic diagram
   Voltage indications for REC and PB mode on the schematic diagram are as shown below.



Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Signal path Symbols

The arrows indicate the signal path as follows.

NOTE : The arrow is DVC unique object.

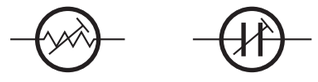
- Playback signal path
- Playback and recording signal path (including E-E signal path)
- Capstan servo path
- Drum servo path

(Example)

- R-Y — Playback R-Y signal path
- Y — Recording Y signal path

6. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



7. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.

CIRCUIT BOARD NOTES

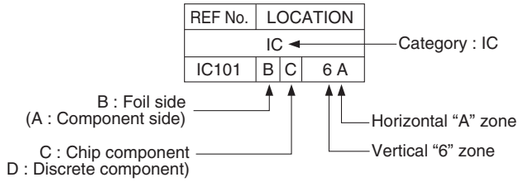
1. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

rts location are indicated by guide scale on the circuit board.

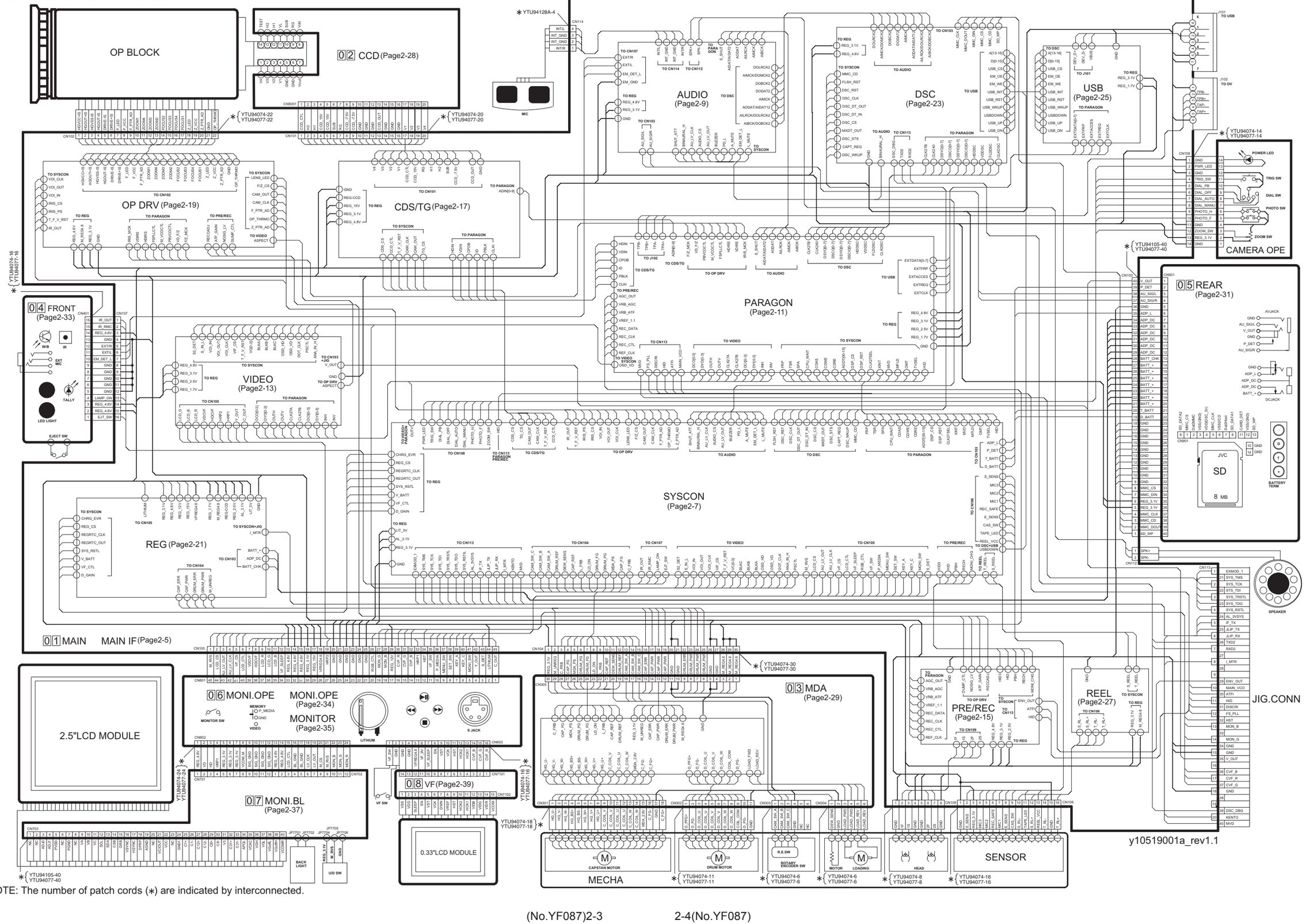
2. Parts location guides

Parts location are indicated by guide scale on the circuit board.



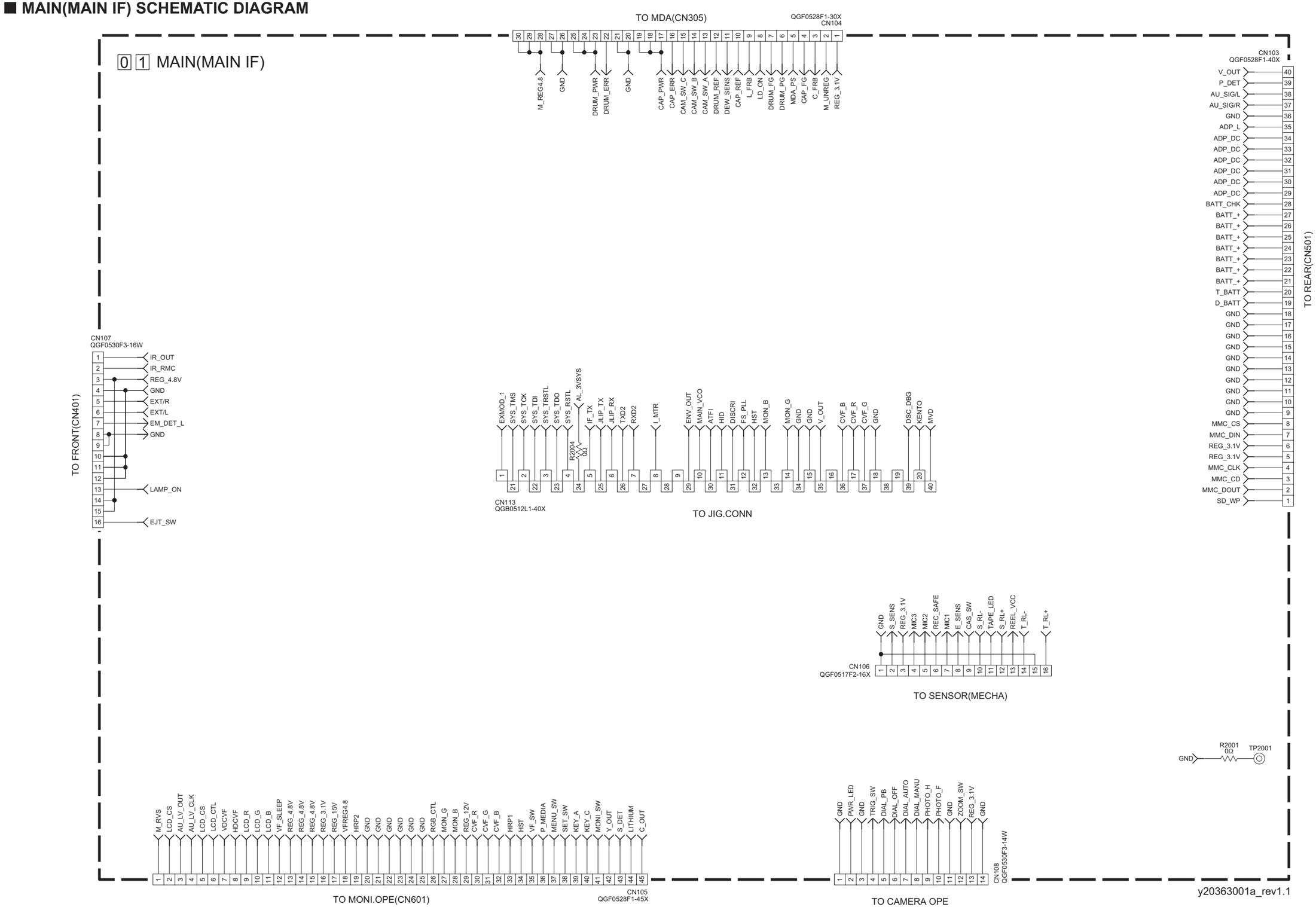
Note: For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

■ BOARD INTERCONNECTION



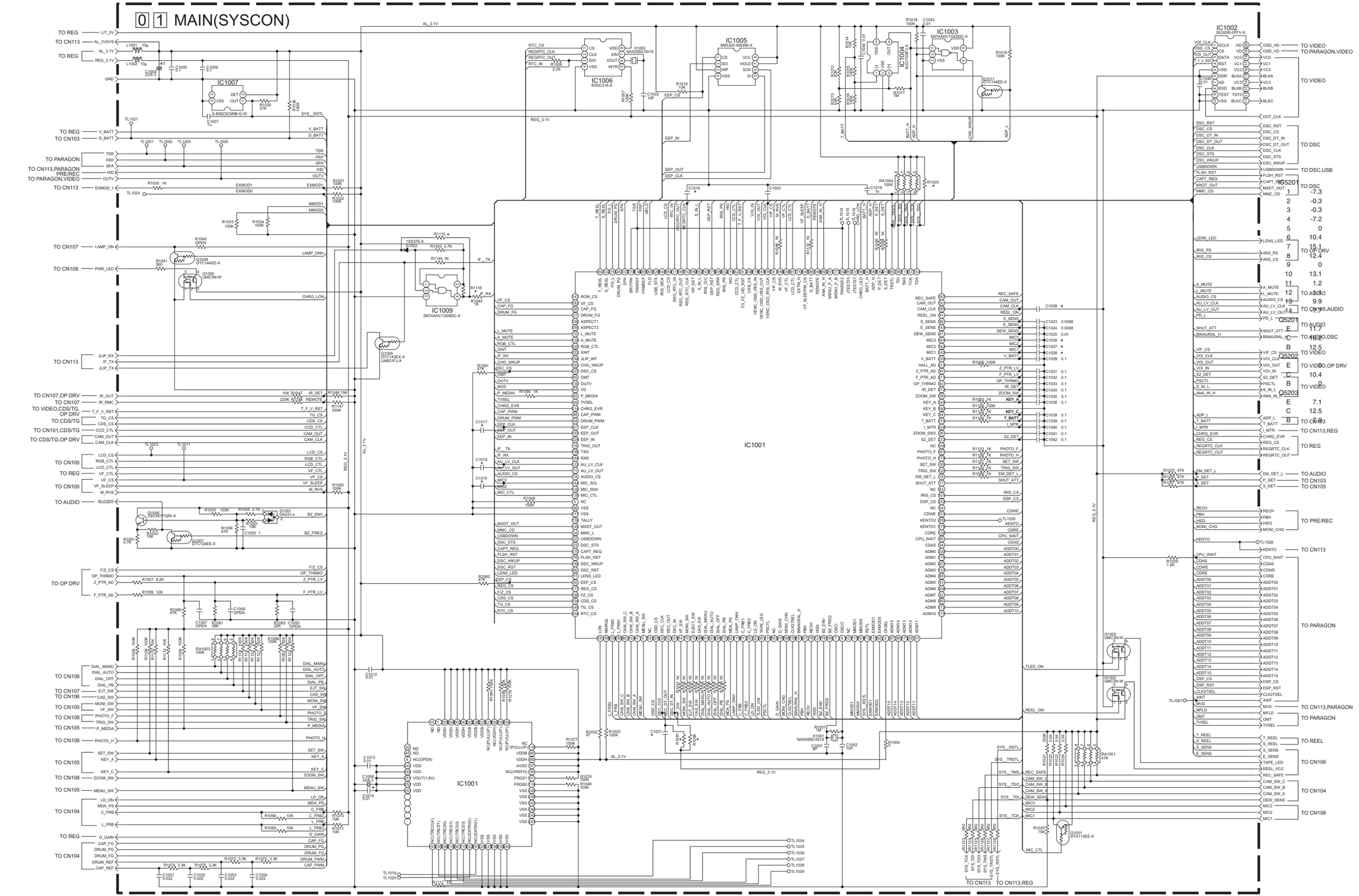
NOTE: The number of patch cords (∗) are indicated by interconnected.

■ MAIN(MAIN IF) SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

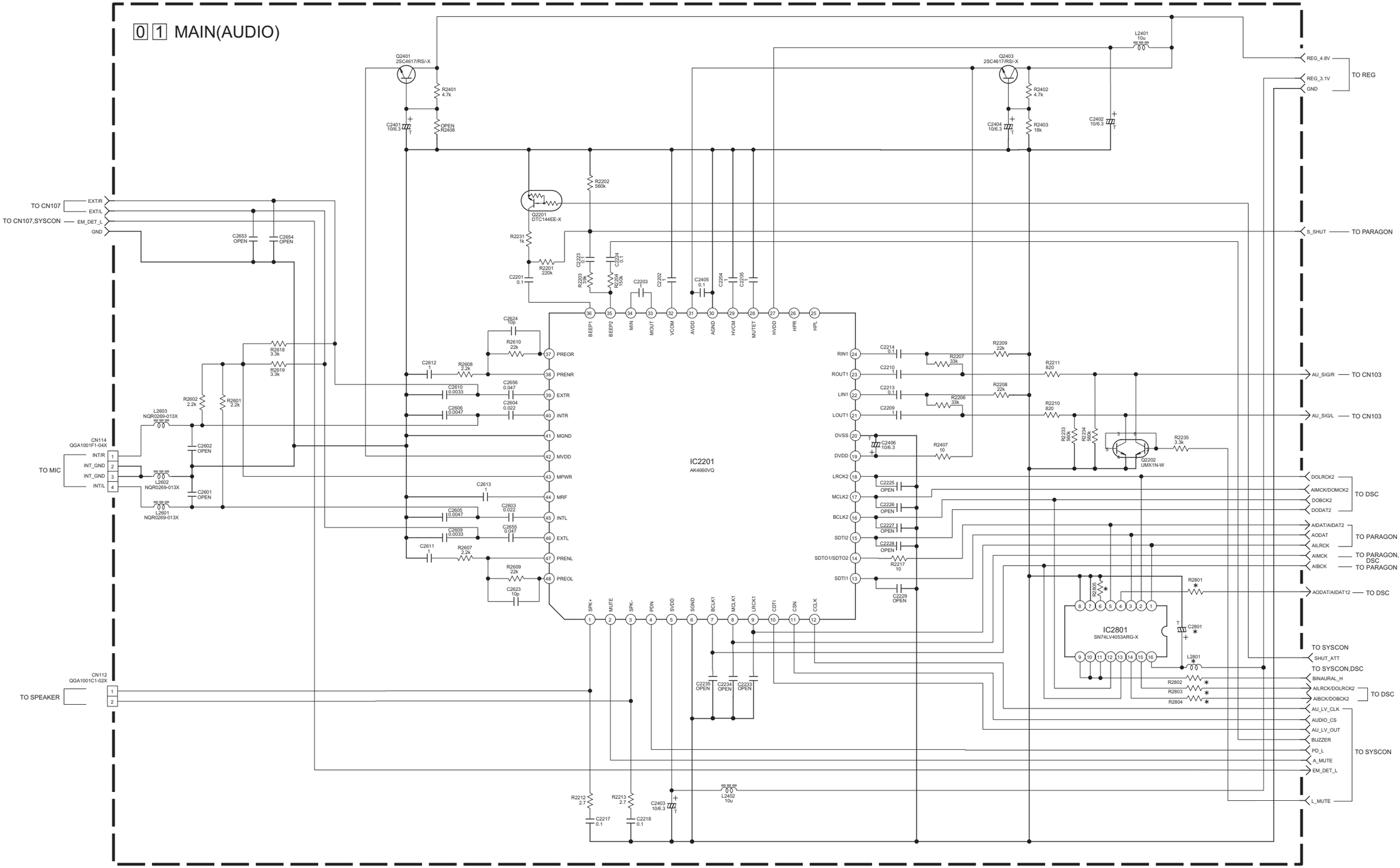
■ MAIN(SYSCON) SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

y10513001a_rev0.1

■ MAIN(AUDIO) SCHEMATIC DIAGRAM



y20365001a_rev0.1

SYMBOL LIST

		LAST	VACANT	NO MOUNT
2200 (MAIN)	R	35	5,14~16,18~30,32	
	C	35	6~8,11,12,15,16,19~22,30~32	25~29,33~35
	Q	2		
2400 (REG)	R	8	4~6	8
	C	6		
	L	2		
	Q	3	2	
2600 (INT MIC)	R	19	3~8,11~17	
	C	24	7,8,14~22	1,2
	L	3		
2650 (EXT MIC)	C	56		53,54
2800 (BINAURAL)	IC	1		
	R	5	2-4	
	C	1		
	L	4		

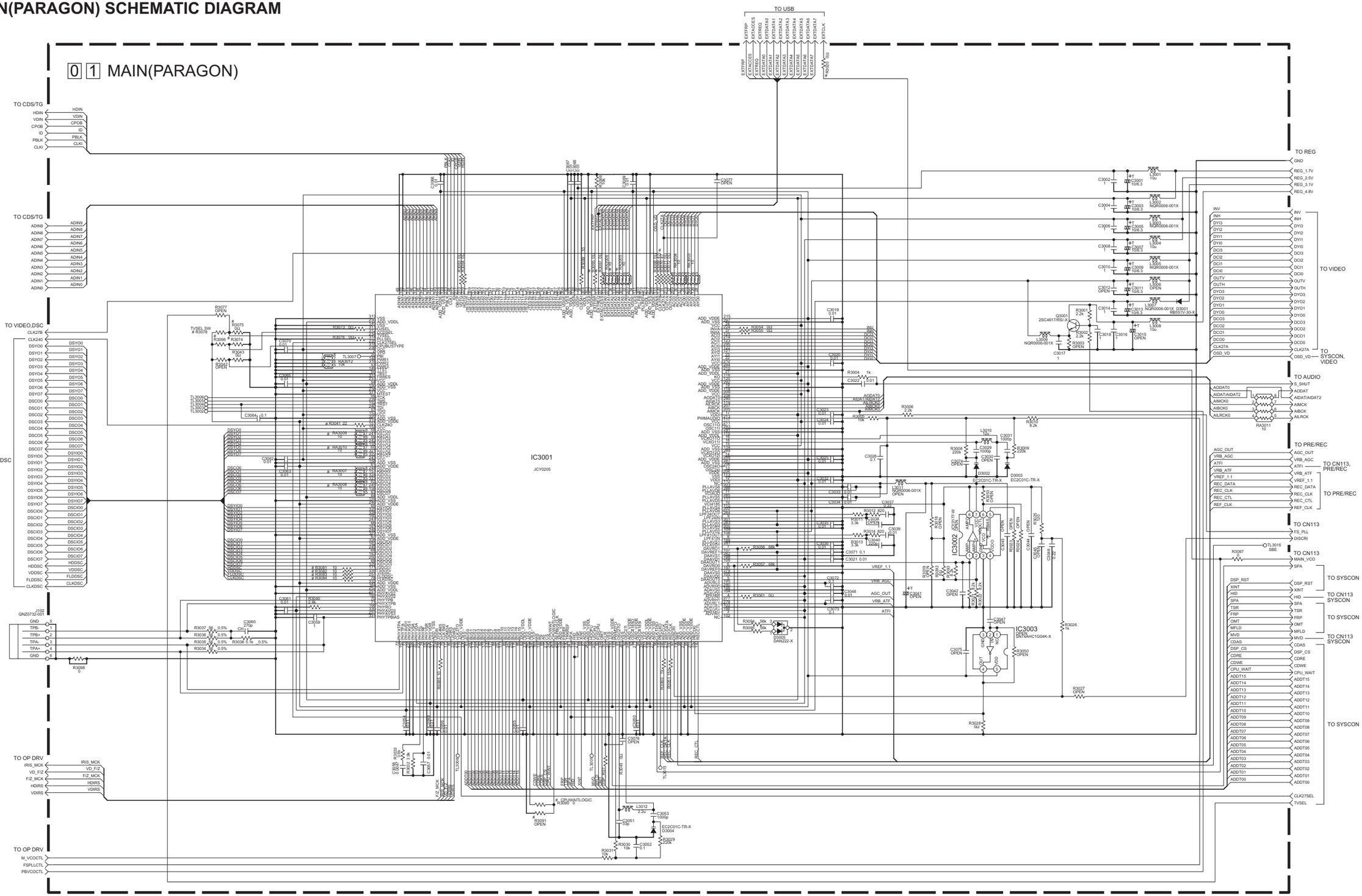
★ MODEL DIFFERENCE

	S2,S3	S4,S5	S6-S9
C2225	0Ω	OPEN	OPEN
C2226	0Ω	OPEN	OPEN
C2227	0Ω	OPEN	OPEN
C2228	0Ω	OPEN	OPEN
IC2801	OPEN	OPEN	SN74LV4053ARG
L2801	OPEN	OPEN	NQR0006-001X
C2801	OPEN	OPEN	10/6.3
R2801	OPEN	OPEN	0Ω
R2802	OPEN	OPEN	0Ω
R2803	OPEN	OPEN	0Ω
R2804	OPEN	OPEN	0Ω
R2805	OPEN	OPEN	0Ω

NOTE: For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".

■ MAIN(PARAGON) SCHEMATIC DIAGRAM

0 1 MAIN(PARAGON)



	R3075	R3078
PAL	OPEN	0 Ω
NTSC	0 Ω	OPEN

	R3090	R3091
Pana CPU	0 Ω	OPEN
NEC CPU	OPEN	0 Ω

	R3074	R3096
NonMEGA	0 Ω	OPEN
MEGA	OPEN	0 Ω

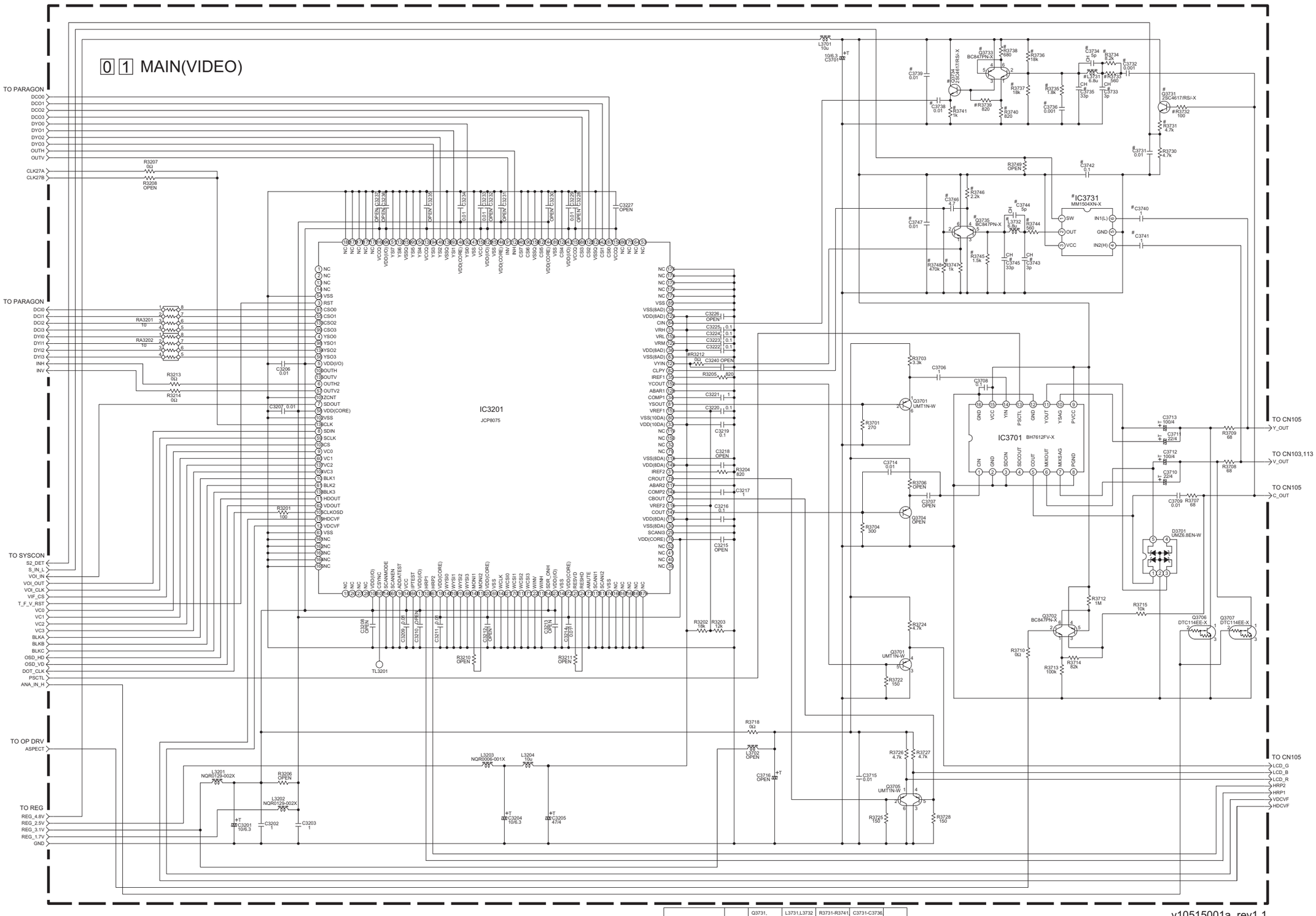
	RA3007-RA3010	R3081-R3084	R3069
with DSC	○	○	○
without DSC	×	×	×

	RA3005-3006	R3020	R3065	R3067
with MC20	○	○	○	○
without MC20	×	×	×	×

	R3041
with BINAURAL	×
without BINAURAL	○

NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

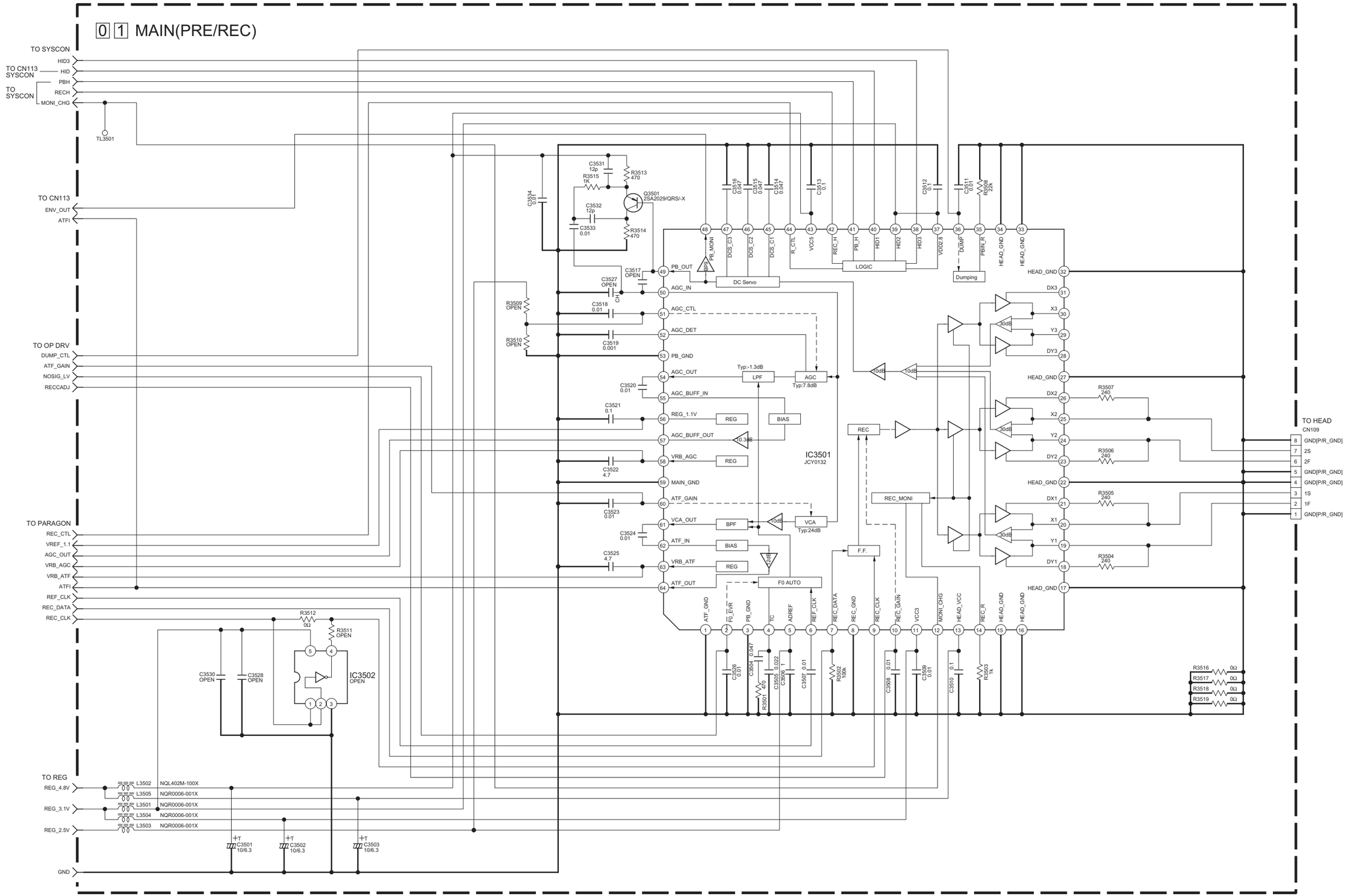
■ MAIN(VIDEO) SCHEMATIC DIAGRAM



	IC3731	Q3731, Q3733-Q3735	L3731,L3732	R3731-R3741 R3744-R3748	C3731-C3736 C3738-C3747	R3212
with ANALOG_INPUT	○	○	○	○	○	○
without ANASLOG_INPUT	×	×	×	×	×	×

NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

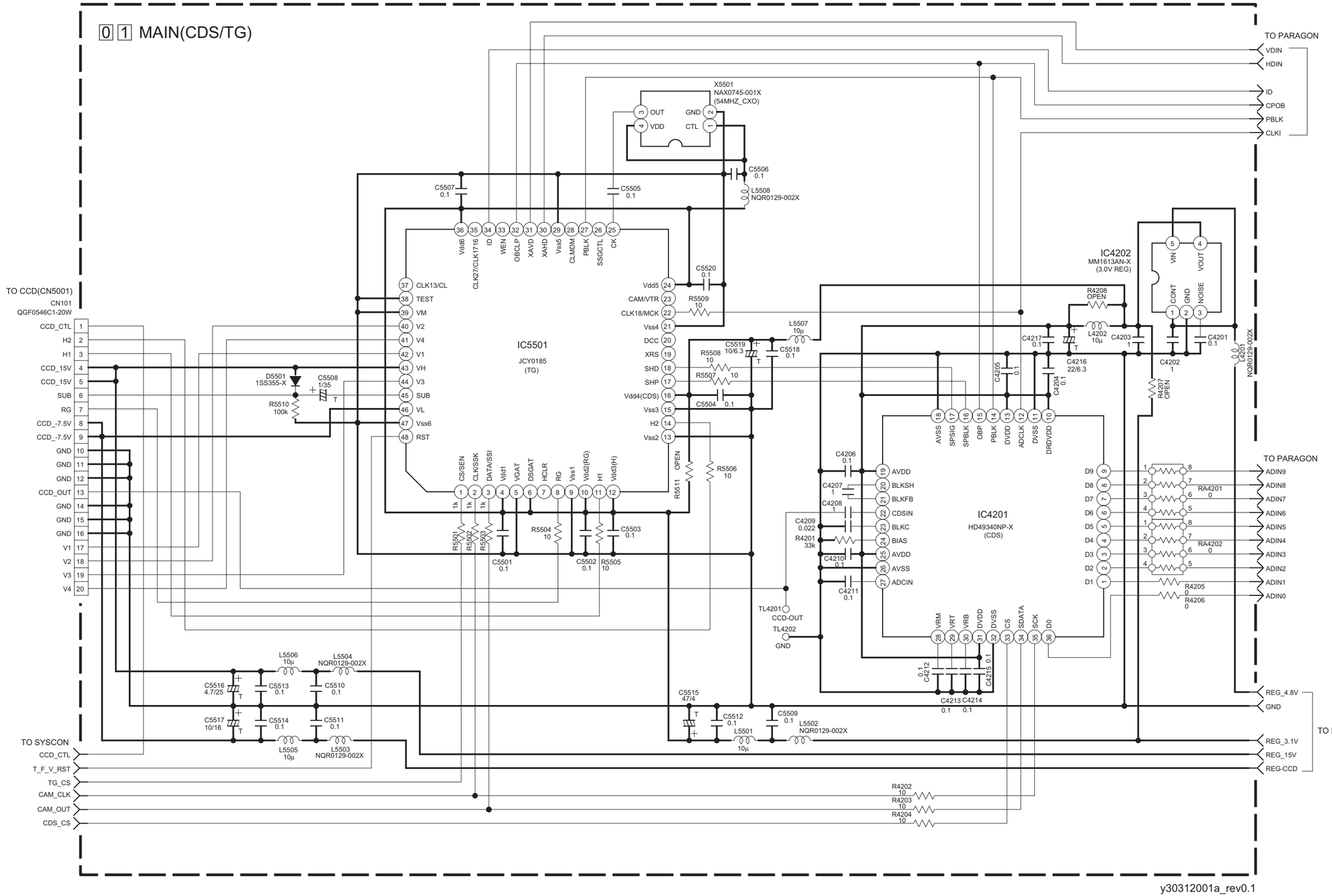
■ MAIN(PRE/REC) SCHEMATIC DIAGRAM



y20366001a_rev0.1

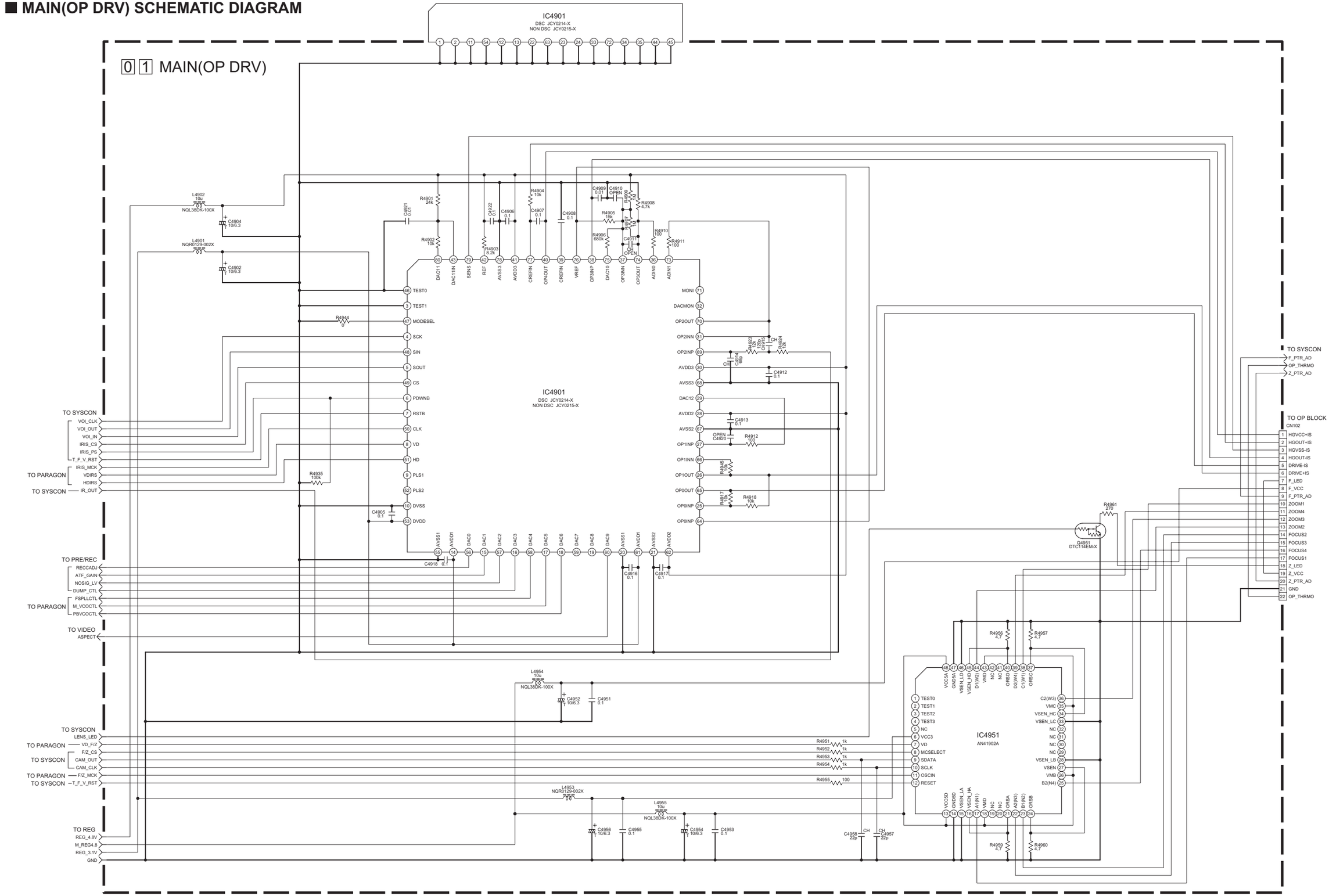
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ MAIN(CDS/TG) SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

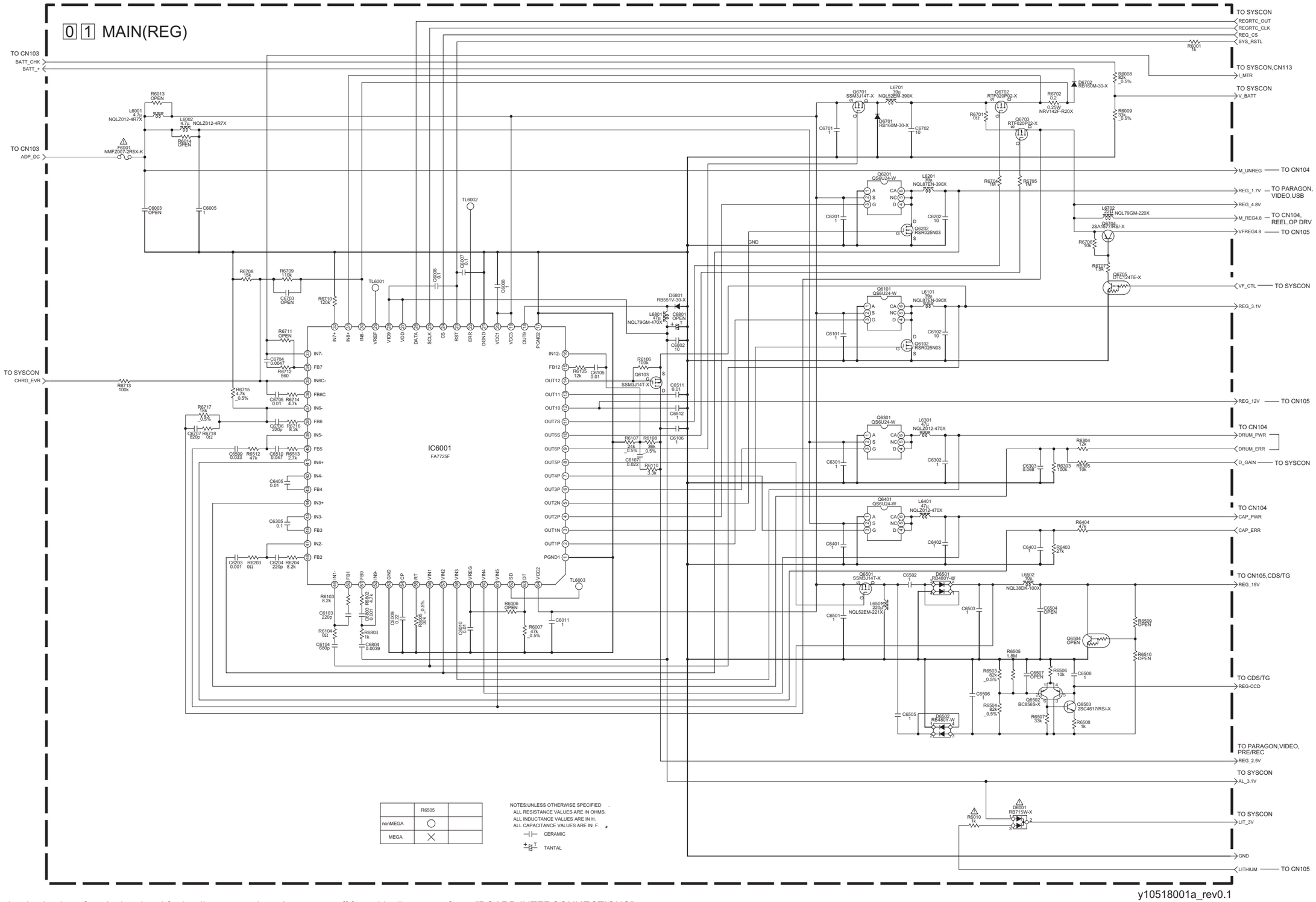
■ MAIN(OP DRV) SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

y10526001a_rev0.1

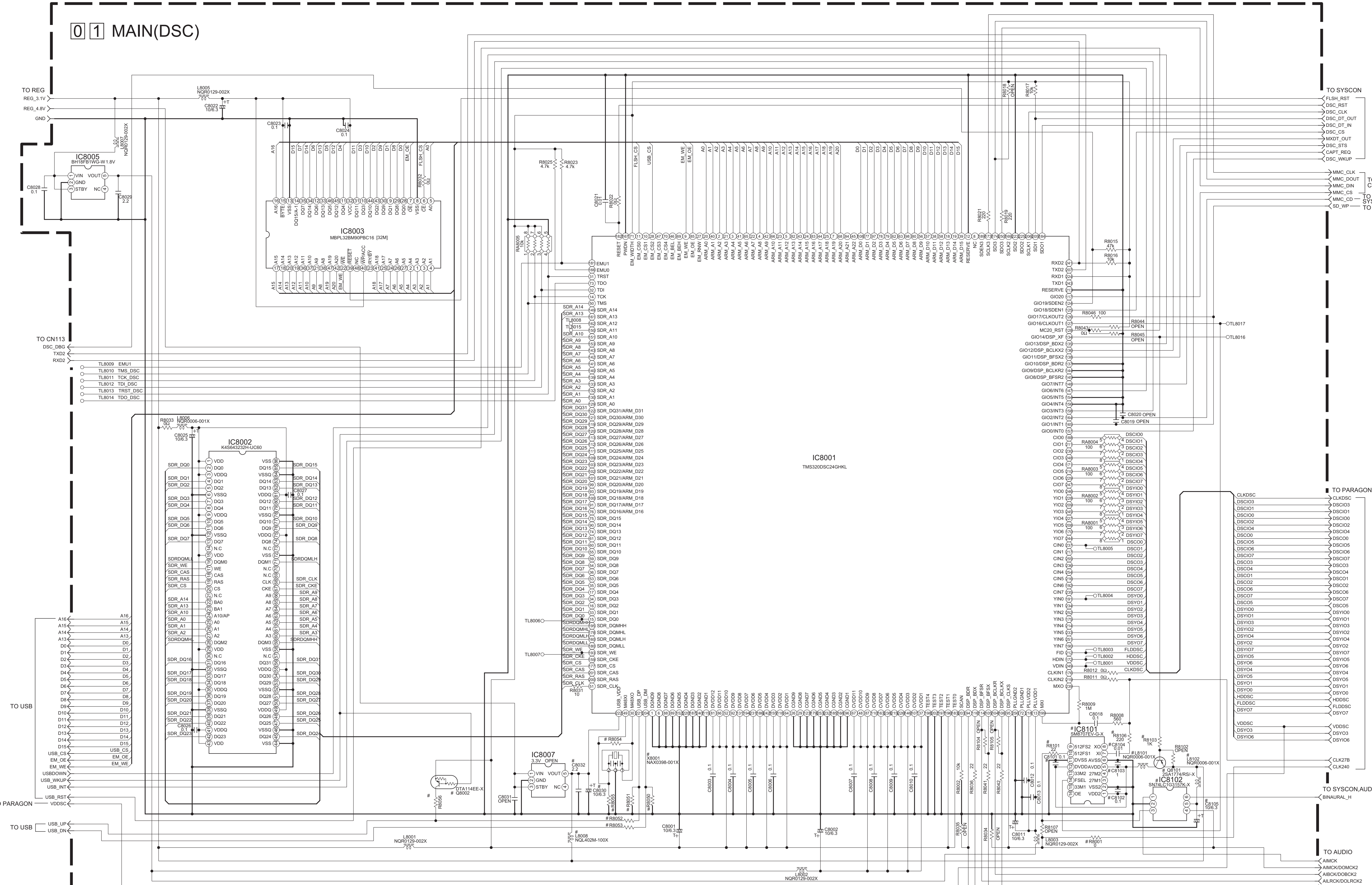
■ MAIN(REG) SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

y10518001a_rev0.1

■ MAIN(DSC) SCHEMATIC DIAGRAM



0 1 MAIN(DSC)
TO REG
REG_3.1V
REG_4.8V
GND
IC8005
BH18FB1WG-W1.8V
IC8003
MBPL32BM90PBC16 [32M]
IC8002
K4S643232H-UC60
IC8001
TMS320DSC24GHKL
IC8007
3.3V OPEN
IC8101
SM8707EV-G-X
IC8102
SN74LC1G3157K-X
Q8101
2SA1774/RS/-X
DTA114EE-X
Q8002
X8001
NAX0398-001X
TO CN113
DSC_DBG
TXD2
RXD2
TL8009 EMU1
TL8010 TMS_DSC
TL8011 TCK_DSC
TL8012 TDI_DSC
TL8013 TRST_DSC
TL8014 TDO_DSC
TO USB
TO PARAGON
VDDSC
USB_UP
USB_DN
TO SYSCON
FLSH_RST
DSC_RST
DSC_CLK
DSC_DT_OUT
DSC_DT_IN
DSC_CS
MXDT_OUT
DSC_STS
CAPT_REQ
DSC_WKUP
MMC_CLK
MMC_DOUT
MMC_DIN
MMC_CS
MMC_CD
SD_WP
TO CN103
TO CN103
SYSCON
TO CN103
TO PARAGON
CLK27B
CLK240
TO SYSCON,AUDIO
BINAURAL_H
TO AUDIO
AIMCK
AIMCK/DOMCK2
AIBCK/DOBCK2
AILRCK/DOLRCK2
DOBCK2
DOLRCK2
DODAT2
AODAT/AIDAT12

#: DIFFERENT PARTS

	Q8002	L8008	X8001	R8050	R8051	R8052	R8053	R8054	R8055	R8056	C8030	C8032
USB VIDEO CLASS	OPEN	OPEN	OPEN	0Ω	0Ω	OPEN	OPEN	OPEN	0Ω	OPEN	OPEN	0Ω
USB MASS STORAGE	DTA114EE-X	NQL402M-100X	NAX0398-001X	1M	1M	22	22	1M	OPEN	1.5K	10/6.3	2.2 µ

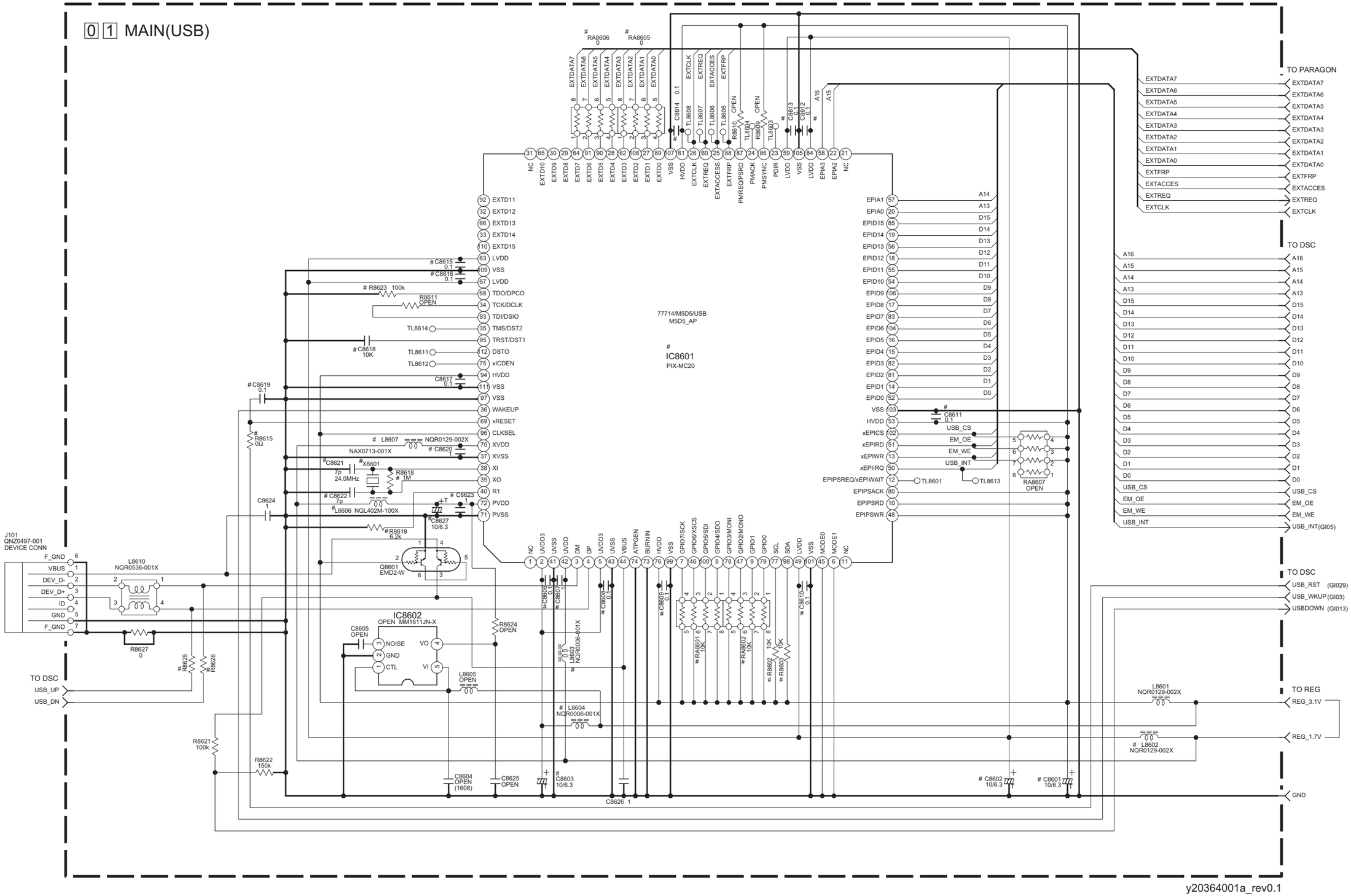
#: DIFFERENT PARTS

	IC8101	Q8101	L8101	R8101,R8103,R8106	C8101-8104	IC8102	L8102	C8105	R8001
with BINAURAL	○	○	○	○	○	○	○	○	×
without BINAURAL	×	×	×	×	×	×	×	×	○

y10516001a_rev0.1

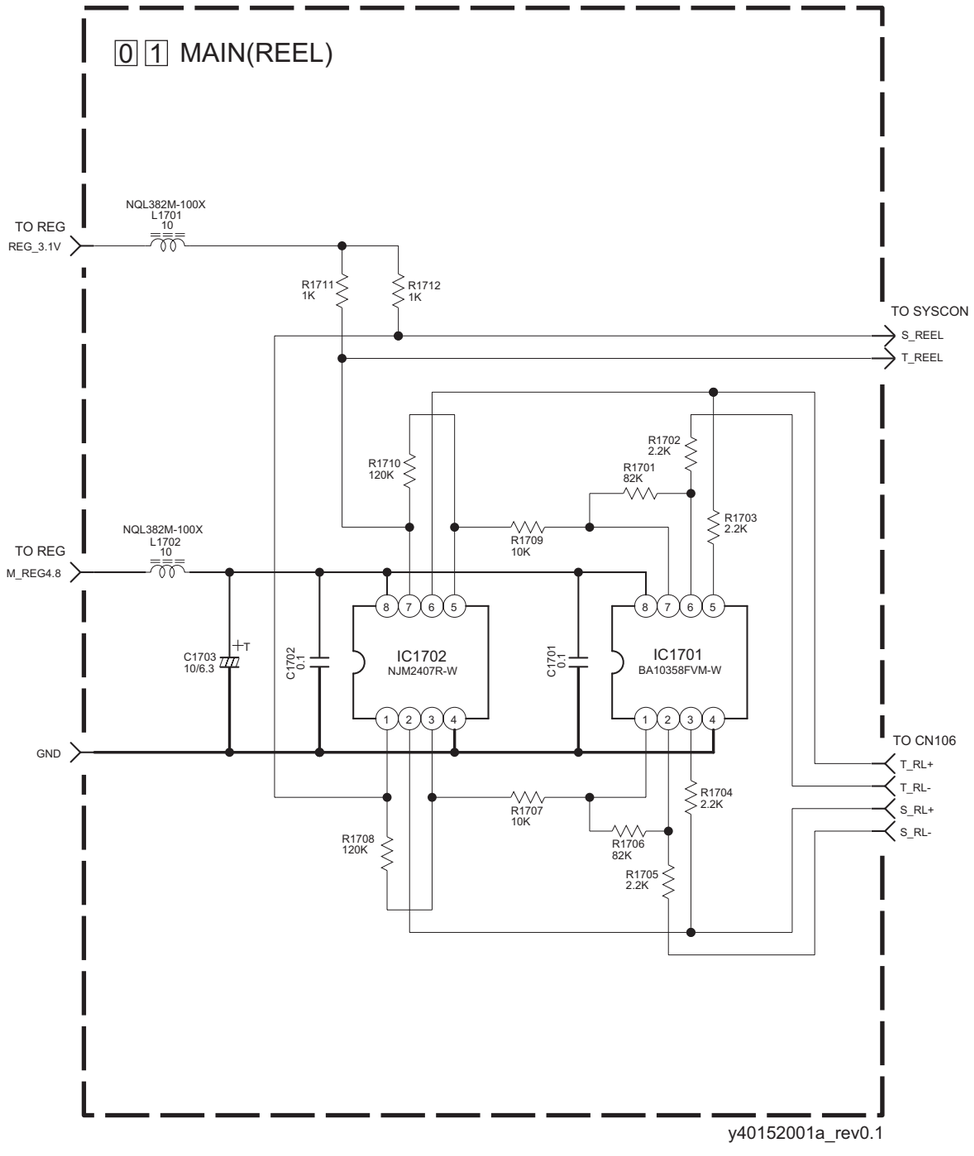
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ MAIN(USB) SCHEMATIC DIAGRAM



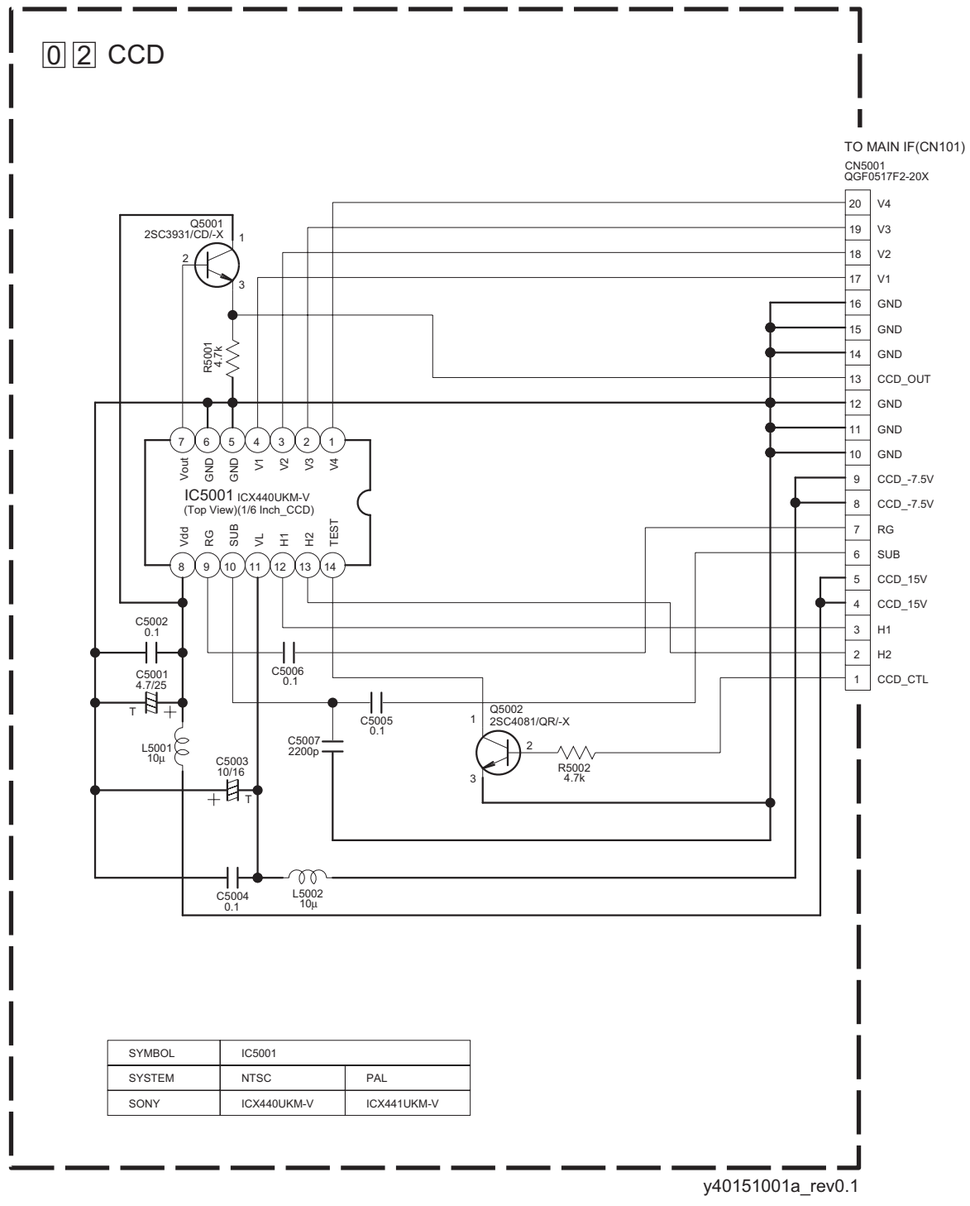
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ MAIN(REEL) SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ CCD SCHEMATIC DIAGRAM

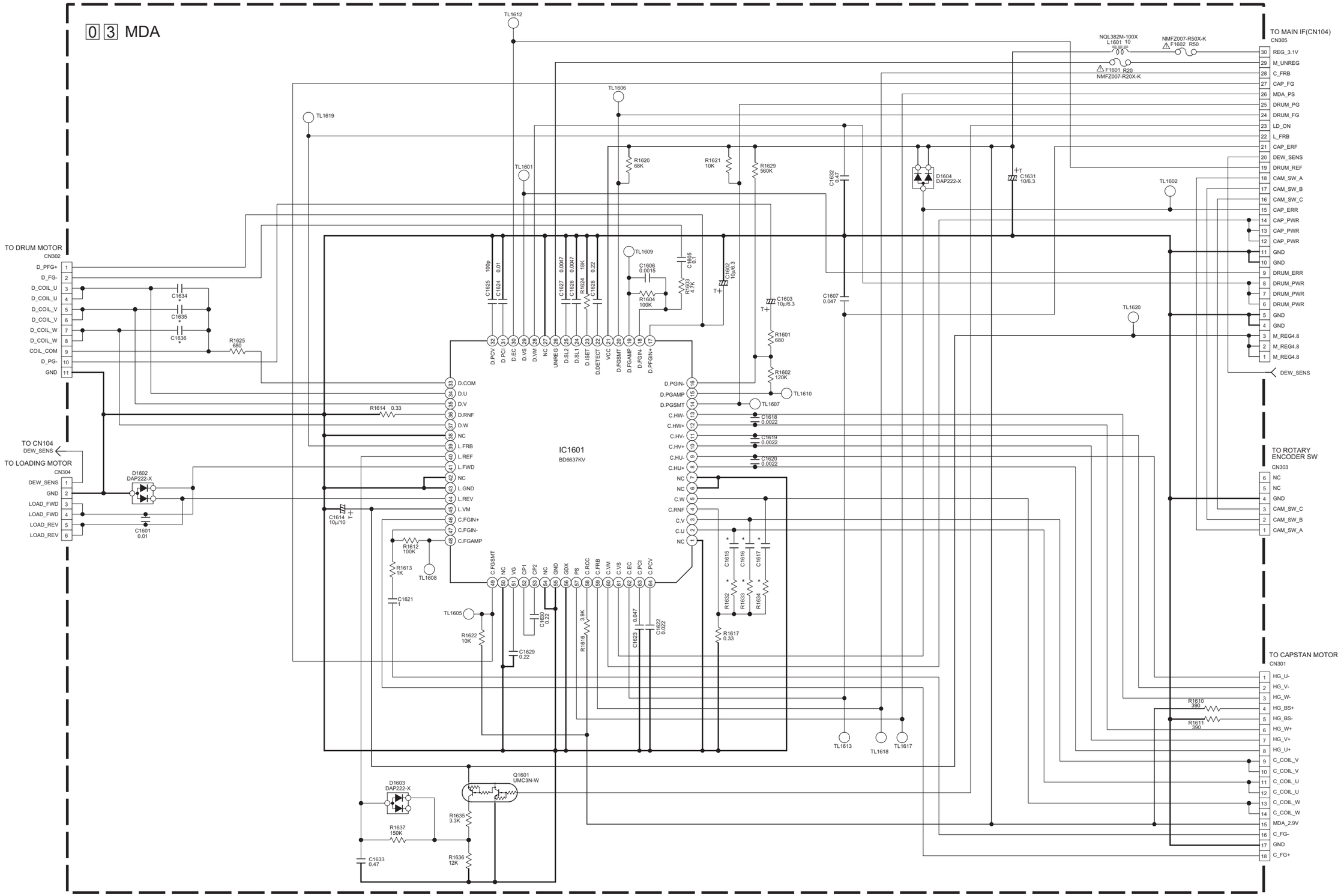


SYMBOL	IC5001	
SYSTEM	NTSC	PAL
SONY	ICX440UKM-V	ICX441UKM-V

	LAST No	VACANT No
R	5002	
C	5007	
L	5002	
Q	5002	
IC	5001	
CN	5001	

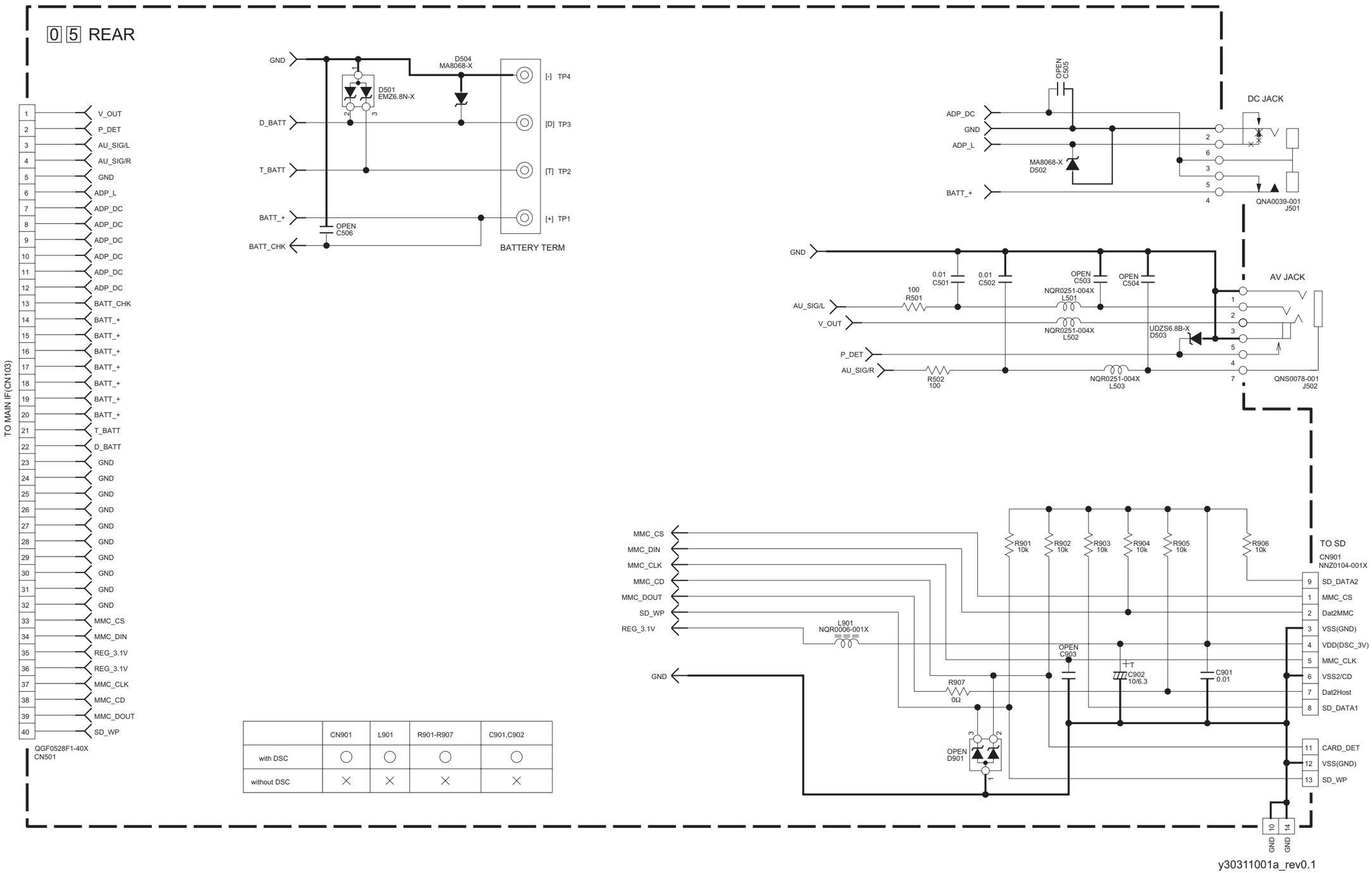
NOTES :1. For the destination of each signal and further line connectionsthat are cut off from this diagram,
refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.
3. IC5001 is incorporated in the CCD base assembly .
When IC5001 needs replacement, replace the CCD base assembly in whole because it cannot be replaced alone.

■ MDA SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

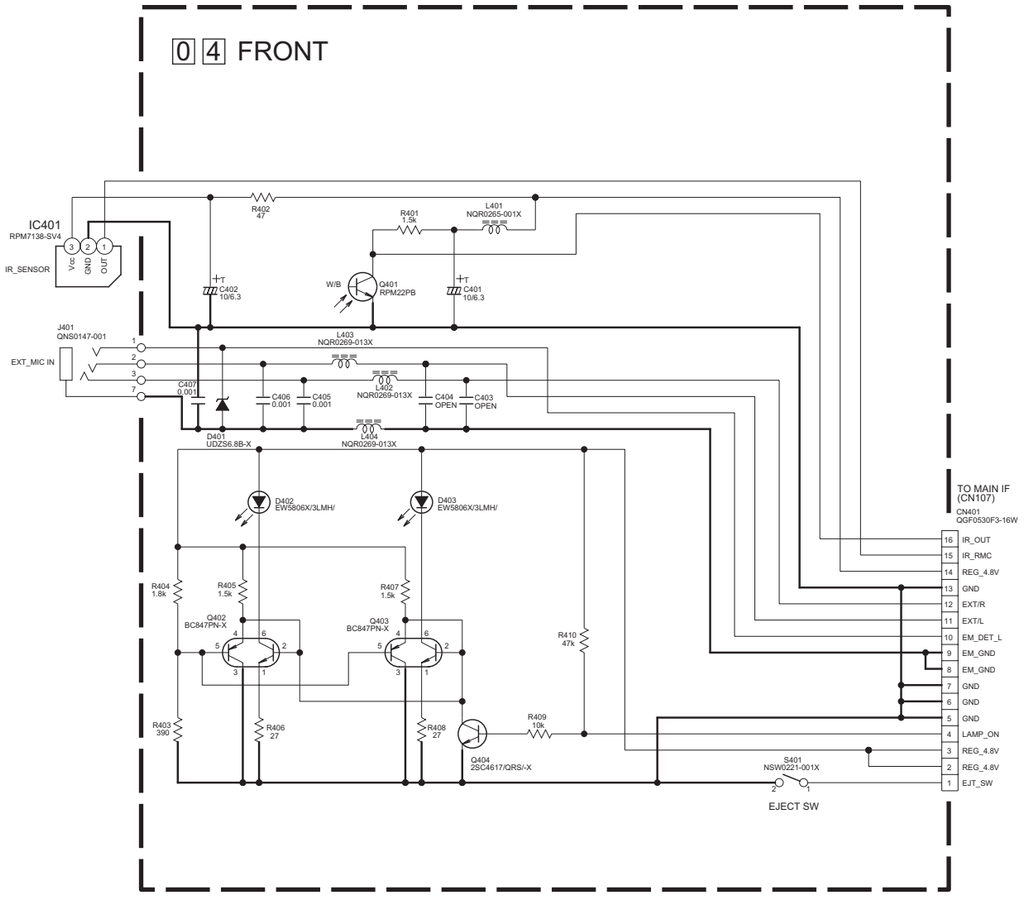
■ REAR SCHEMATIC DIAGRAM



	CN901	L901	R901-R907	C901,C902
with DSC	○	○	○	○
without DSC	×	×	×	×

NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ FRONT SCHEMATIC DIAGRAM

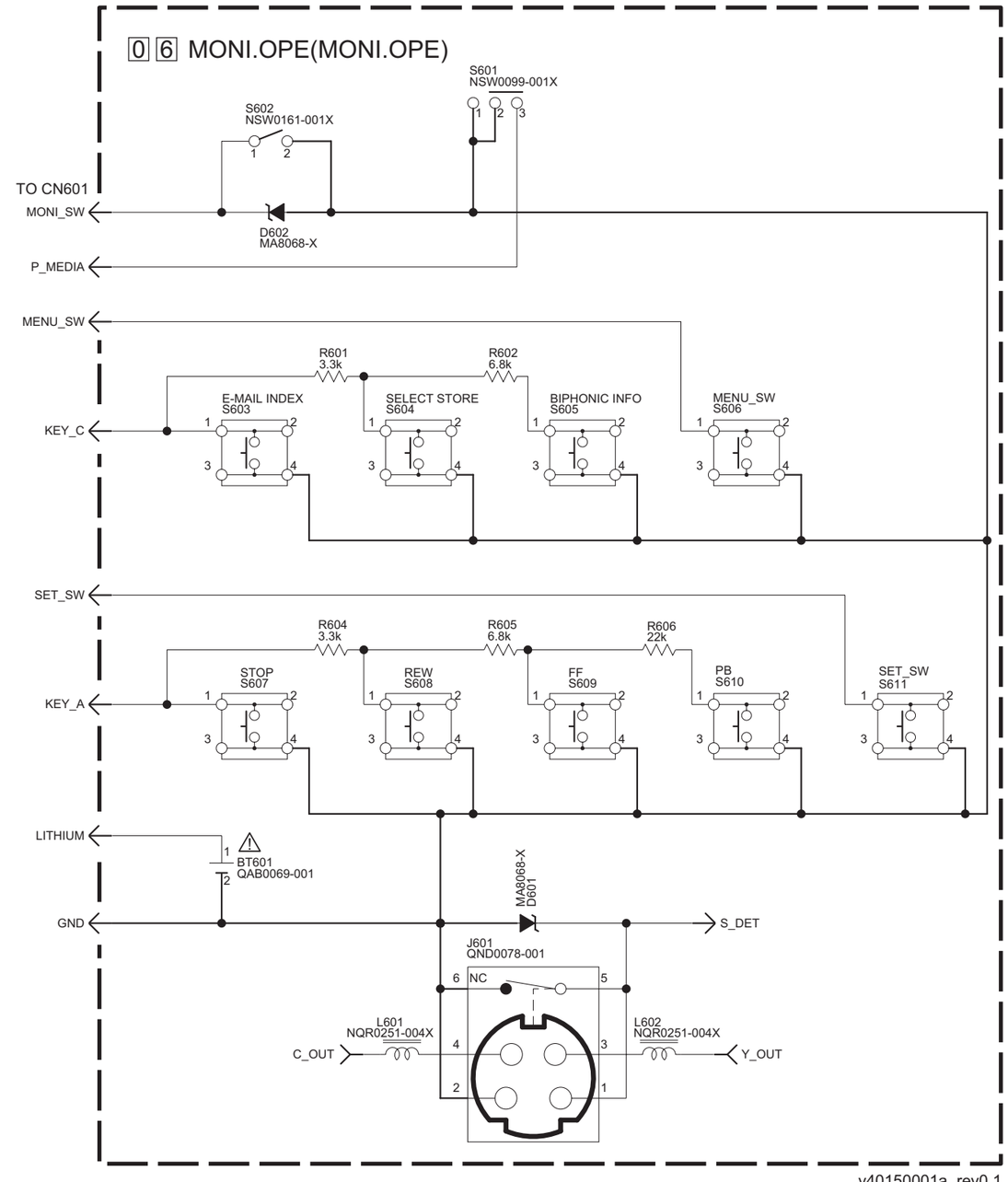


y30310001a_rev0.1

	Q402-Q404	D402,D403	R403-R410
with LIGHT LED	○	○	○
without LIGHT LED	×	×	×

NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ MONI.OPE(MONI.OPE) SCHEMATIC DIAGRAM

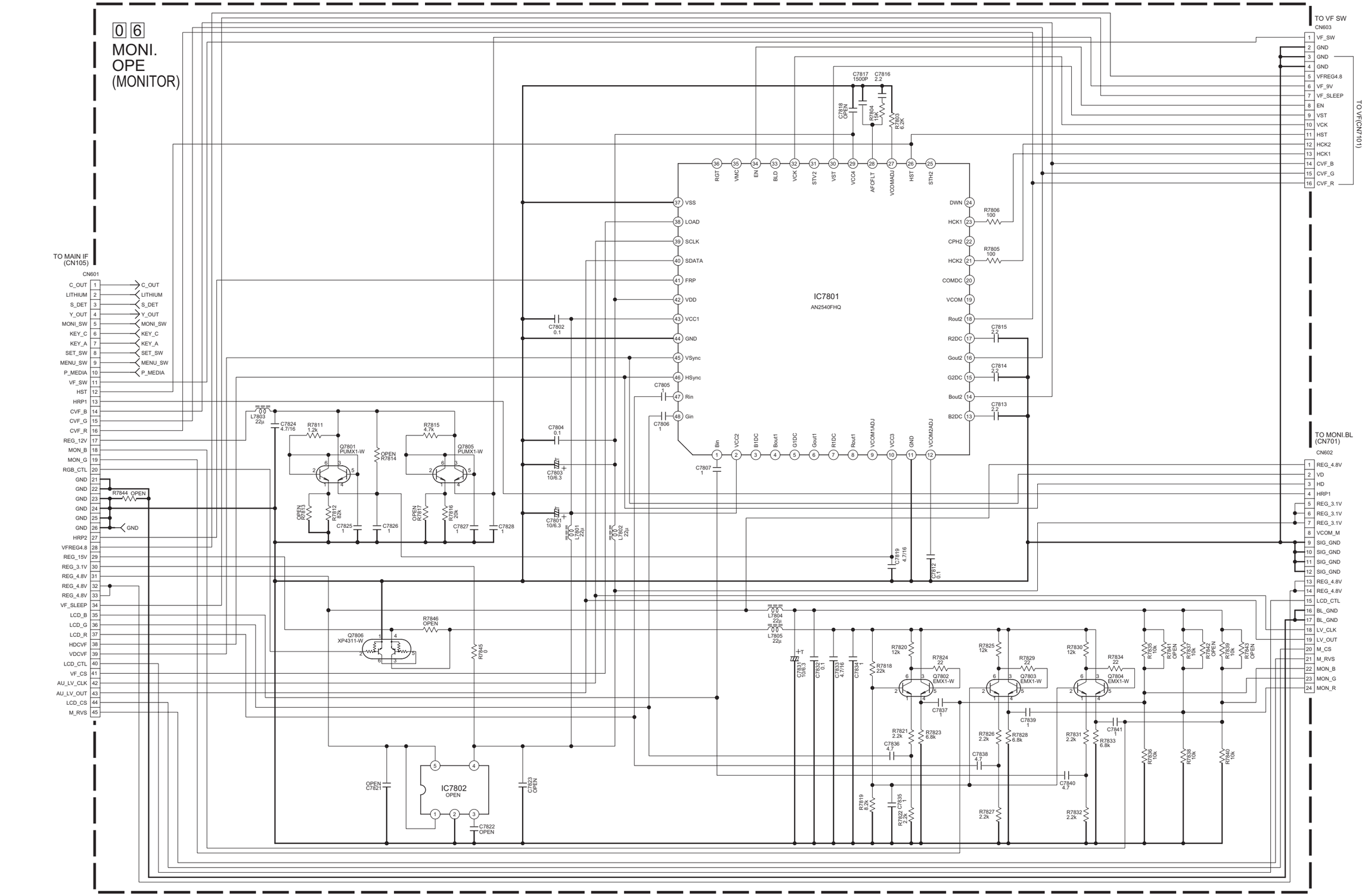


y40150001a_rev0.1

	S601 S603-S605	R601,R602
with DSC	○	○
without DSC	×	×

NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

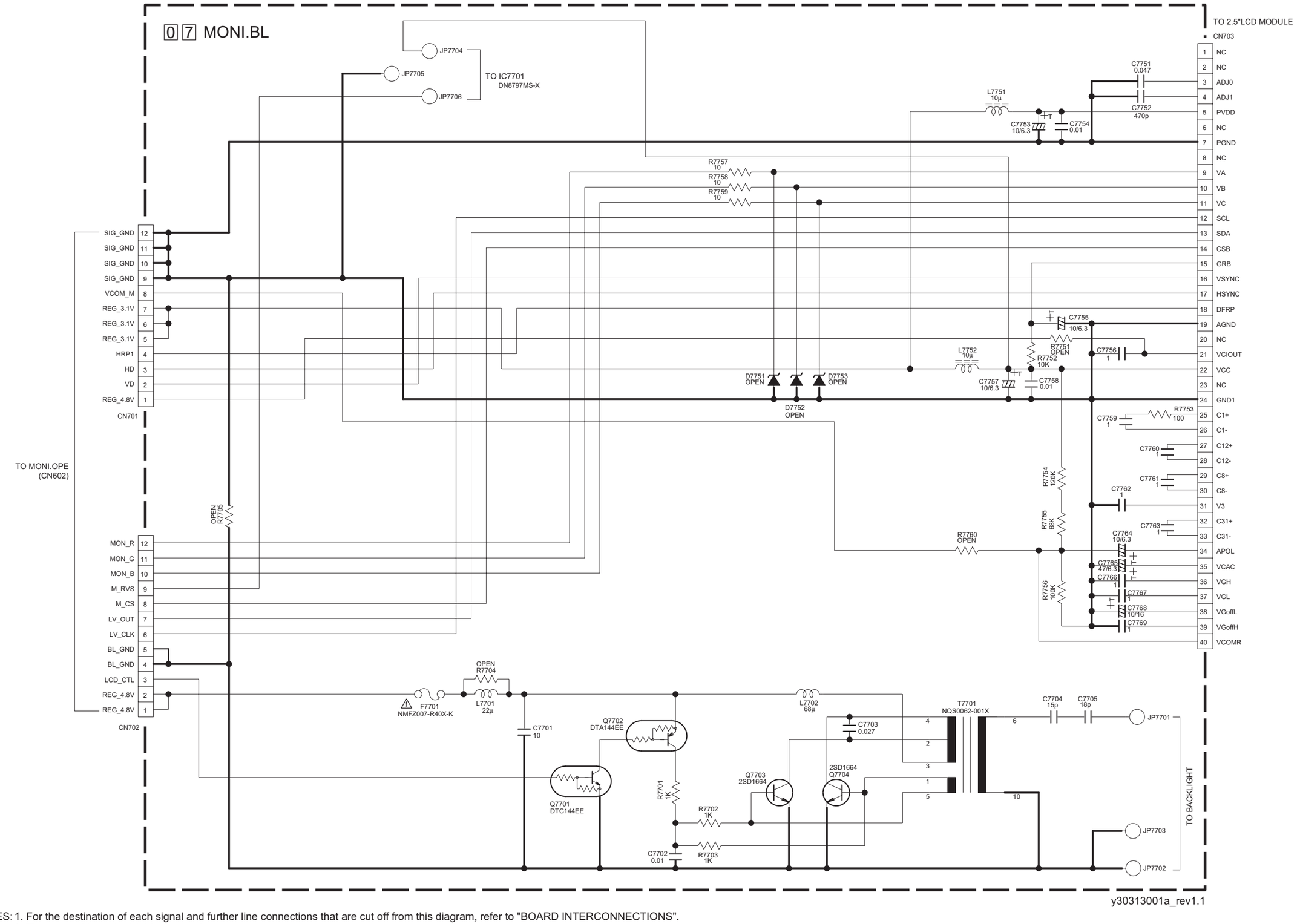
■ MONI.OPE(MONITOR) SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

y20368001a_rev0.1

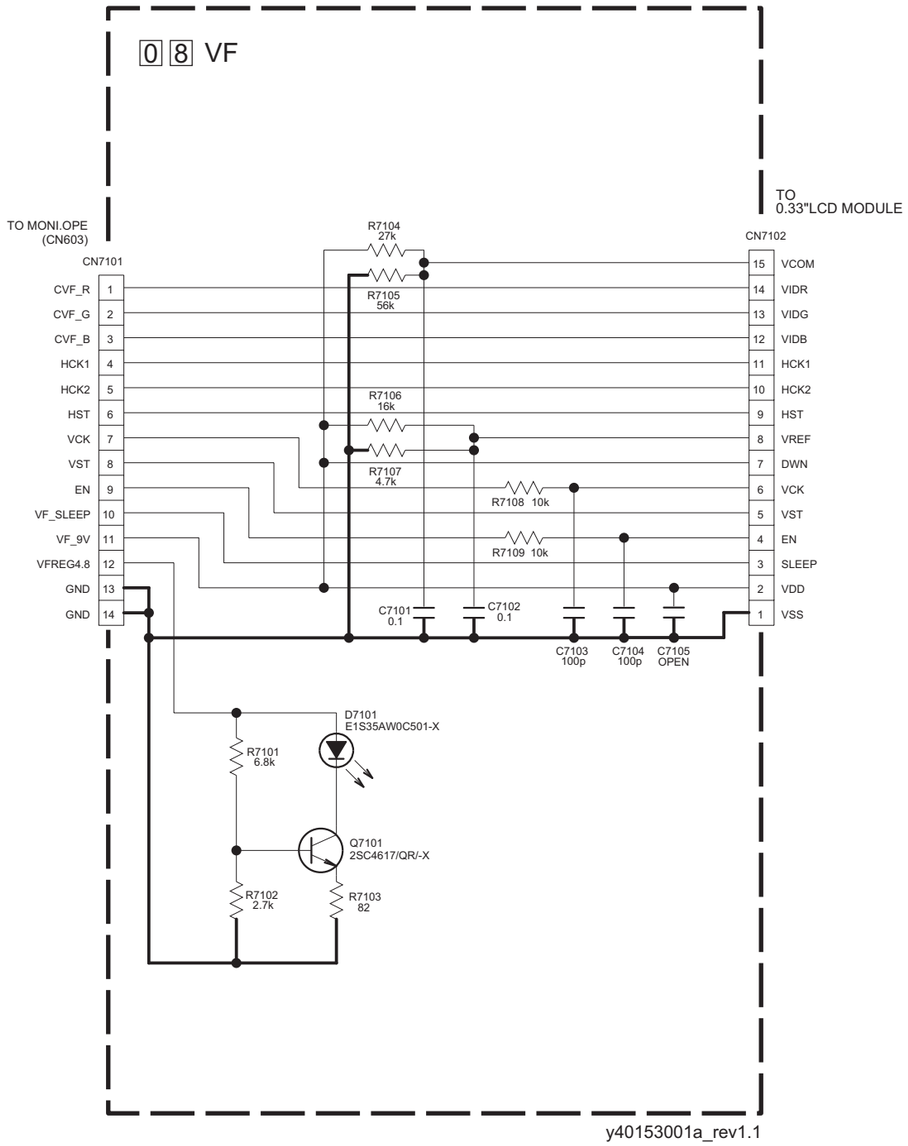
■ MONI.BL SCHEMATIC DIAGRAM



y30313001a_rev1.1

NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ VF SCHEMATIC DIAGRAM



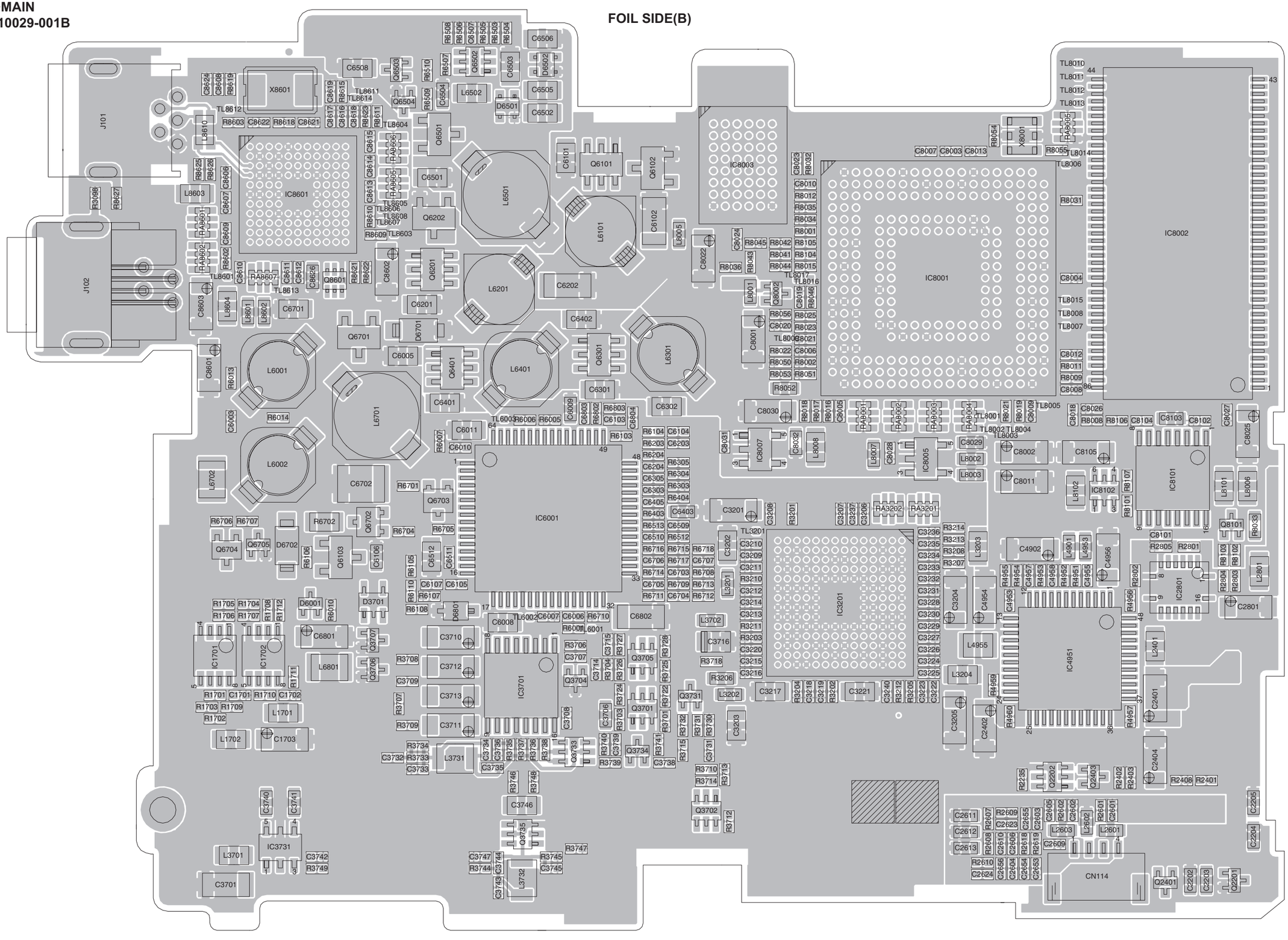
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ MAIN CIRCUIT BOARD

<01>MAIN

LYB10029-001B

FOIL SIDE(B)



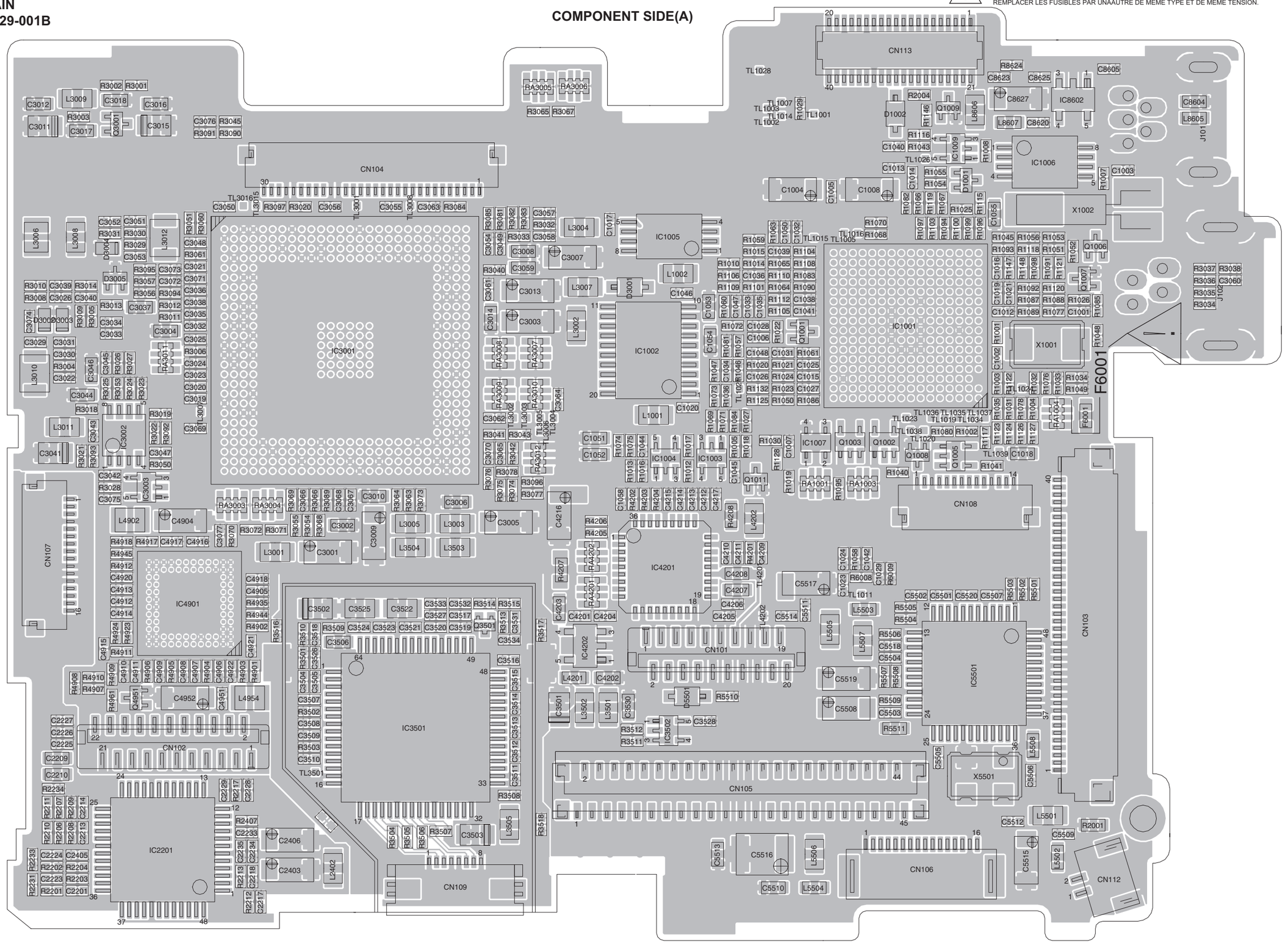
■ MAIN CIRCUIT BOARD

<01>MAIN

LYB10029-001B

CAUTION :
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE AND RATED FUSE(S).
ATTENTION :
POUR UNE PROTECTION PERMANENTE CONTRE LES RISQUE D'INCENDE,
REMPLACER LES FUSIBLES PAR UNAAUTRE DE MEME TYPE ET DE MEME TENSION.

COMPONENT SIDE(A)

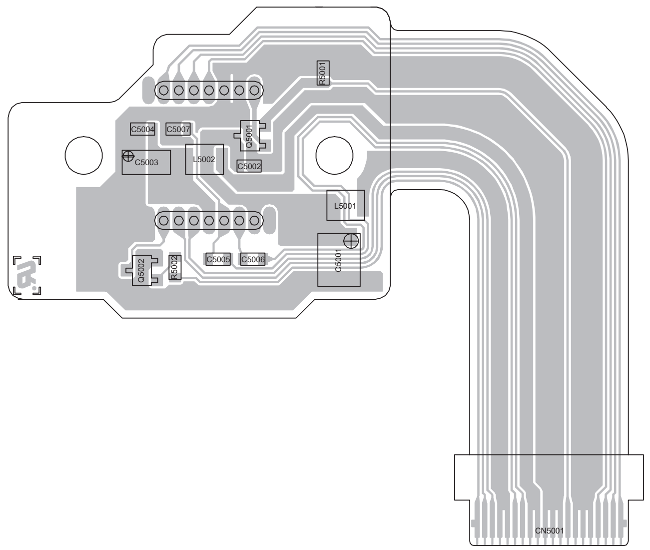


■ CCD, MDA, FRONT, REAR, MONI.OPE, MONI.BL, VF CIRCUIT BOARDS

CAUTION :
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE AND RATED FUSE(S).
ATTENTION :
POUR UNE PROTECTION PERMANENTE CONTRE LES RISQUE D'INCENDE,
REMPLACER LES FUSIBLES PAR UNAAUTRE DE MEME TYPE ET DE MEME TENSION.

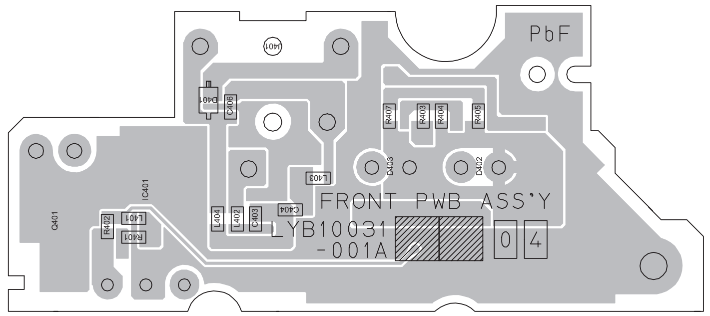
<02>CCD
LYB10037-001B

COMPONENT SIDE(A)

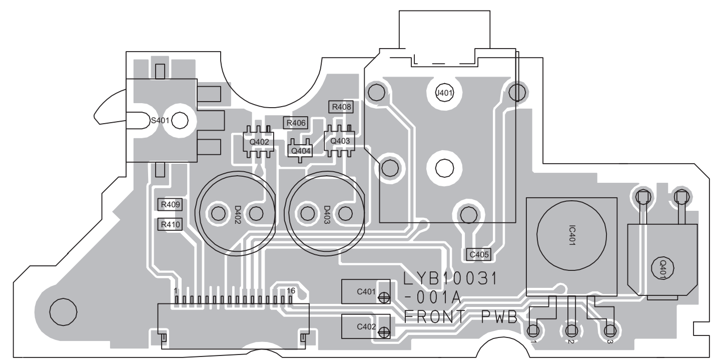


<04>FRONT
LYB10031-001A

FOIL SIDE(B)

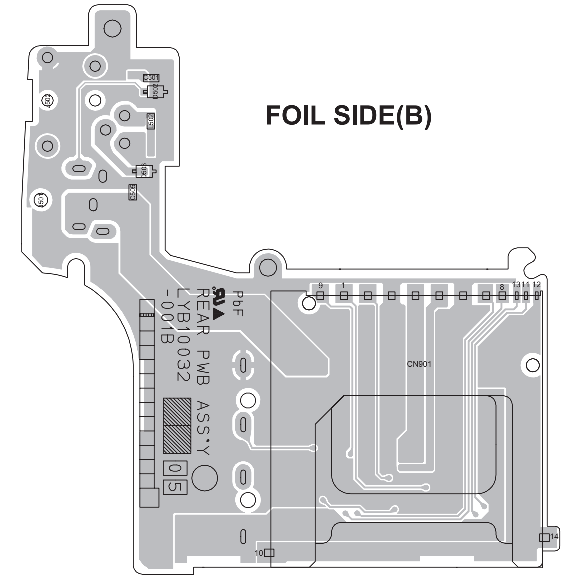


COMPONENT SIDE(A)

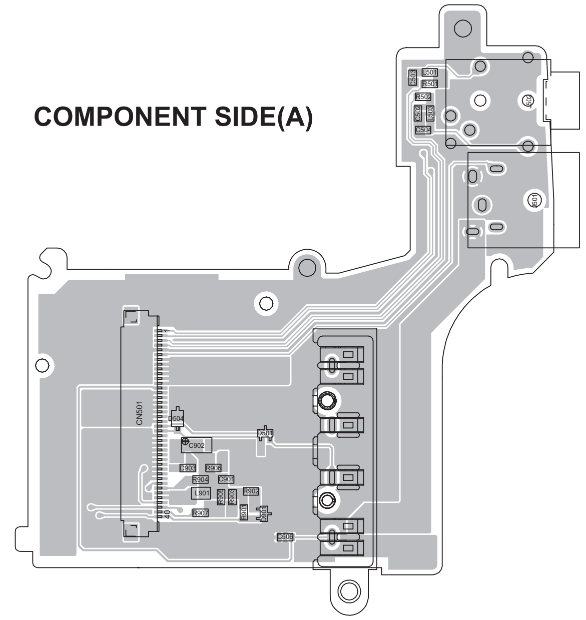


<05>REAR
LYB10032-001B

FOIL SIDE(B)

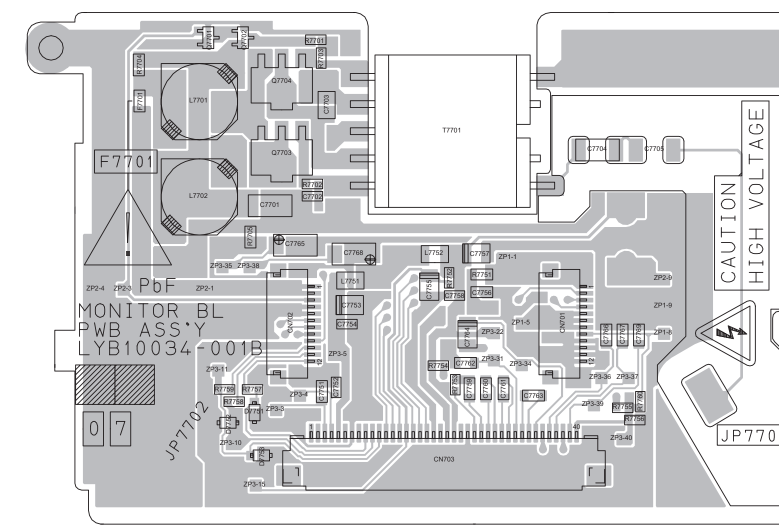


COMPONENT SIDE(A)



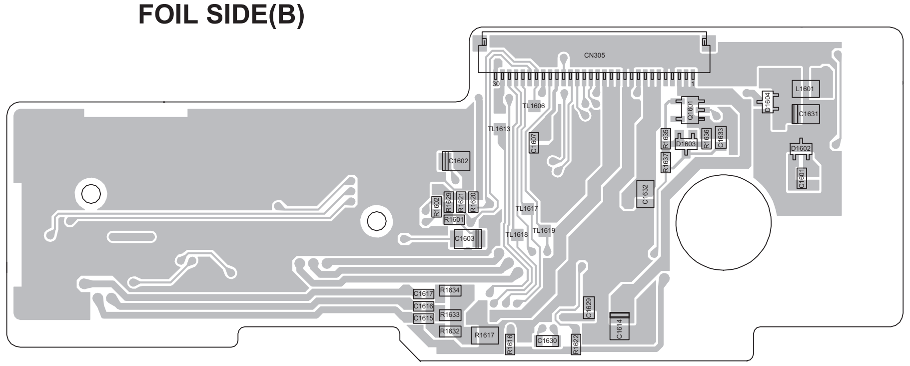
<07>MONI.BL
LYB10034-001B

COMPONENT SIDE(A)

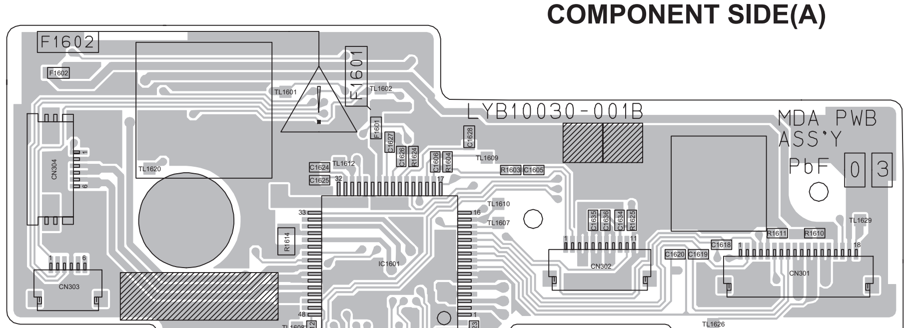


<03>MDA
LYB10030-001B

FOIL SIDE(B)

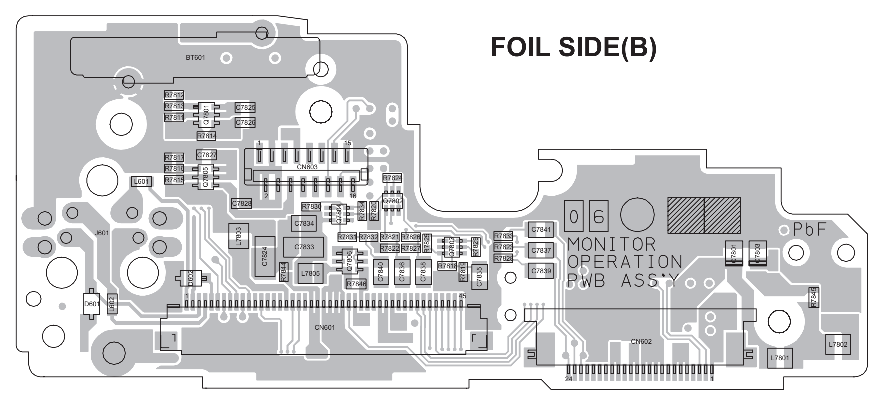


COMPONENT SIDE(A)

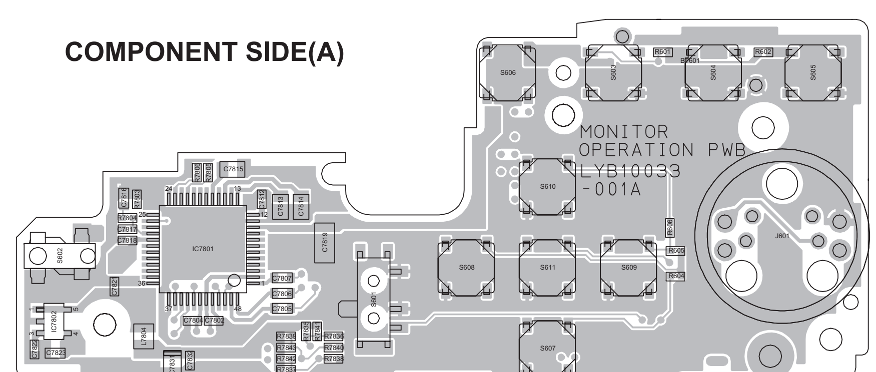


<06>MONI.OPE
LYB10033-001A

FOIL SIDE(B)

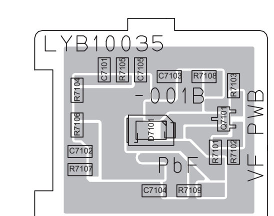


COMPONENT SIDE(A)

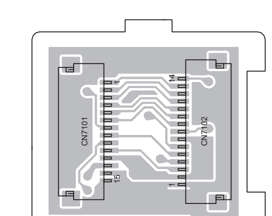


<08>VF
LYB10035-001B

FOIL SIDE(B)

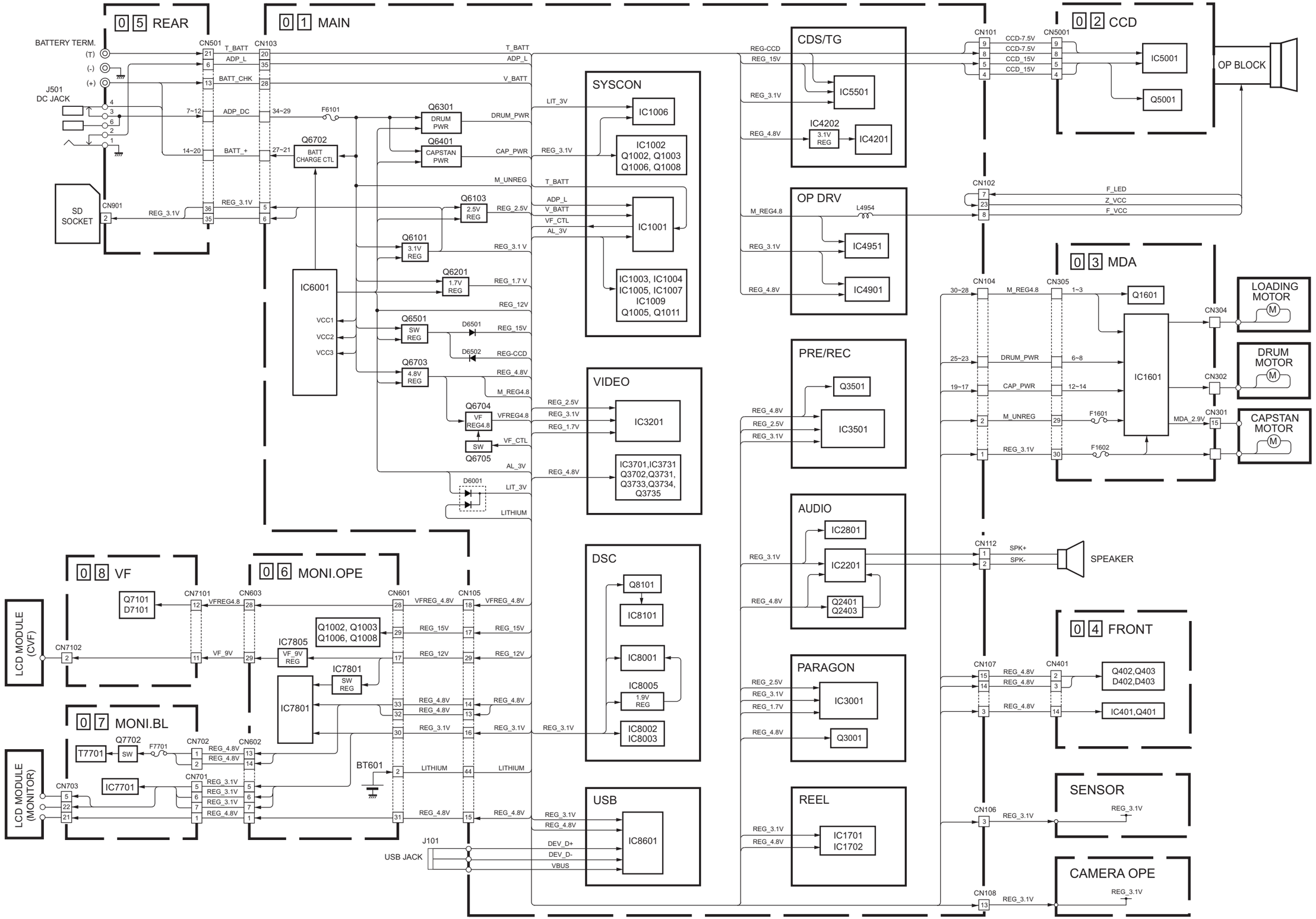


COMPONENT SIDE(A)



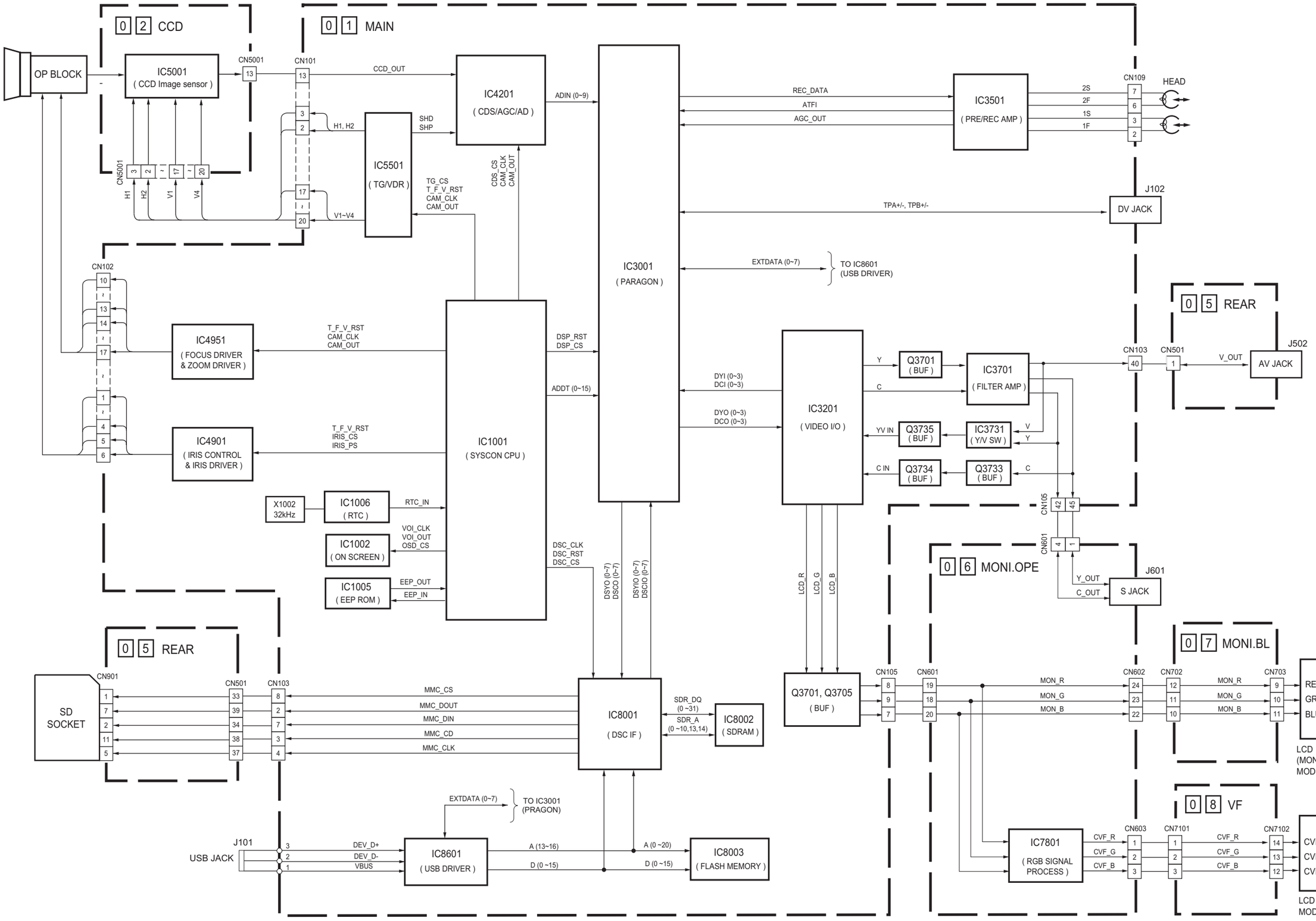
■ POWER SYSTEM BLOCK DIAGRAM

NOTE: There are circuits or functions that are not used according to the models. Please check with the Parts List.



■ VIDEO SYSTEM BLOCK DIAGRAM

NOTE: There are circuits or functions that are not used according to the models. Please check with the Parts List.



■ VOLTAGE CHARTS

<MAIN>

MODE PIN NO.	REC	PLAY
IC1001	-	-
IC1002		
1	2.9	2.9
2	2.6	2.7
3	0.3	0.3
4	3.1	3.1
5	3.1	3.0
6	3.1	3.0
7	0	0
8	1.4	1.4
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	2.6	2.6
15	0	0
16	0	0
17	0	0
18	0	0
19	2.9	3.0
20	2.8	2.8
IC1003		
1	0	0
2	3.0	3.0
3	0	0
4	3.0	3.0
5	0	3.1
IC1004		
1	1.4	1.4
2	0	0
3	1.2	1.2
4	0	0
5	3.1	3.0
IC1005		
1	3.0	3.0
2	0	0.5
3	3.0	3.1
4	0	0
5	3.0	3.0
6	3.0	3.1
7	3.1	3.1
8	3.0	3.0
IC1006		
1	0	0
2	3.0	3.0
3	3.1	3.1
4	0	0
5	2.9	3.0
6	0.4	0.1
7	0.4	0.3
8	3.1	3.1
IC1007		
1	3.1	3.0
2	3.0	3.0
3	0	0
4	0	0
IC1009		
1	3.1	3.1
2	3.1	3.0
3	0	0
4	3.1	3.1
5	3.0	3.0
IC1701		
1	-	-
2	1.4	1.4
3	1.4	1.4
4	0	0
5	1.5	1.4
6	1.4	1.4
7	-	-
8	4.8	4.9
IC1702		
1	3.1	3.1
2	1.3	1.4
3	-	-
4	0	0
5	-	-
6	1.4	1.4
7	3.0	3.1
8	4.9	4.8
IC2201		
1	0.6	1.5
2	0	0
3	0.5	1.5
4	3.1	3.1
5	3.0	3.0
6	0	0
7	1.4	1.5
8	1.4	1.3
9	1.5	1.4
10	0	0
11	0	2.7
12	3.0	3.0
13	1.3	1.4
14	1.4	0
15	0	0.7
16	0.6	0.6
17	0	0
18	0.6	0.7
19	3.1	3.1
20	0	0
21	0.7	0.7
22	1.4	1.5
23	0.8	0.8
24	1.5	1.5
25	0	0
26	0	0
27	4.8	4.8
28	0	0
29	2.4	2.4
30	0	0
31	0	3.1
32	1.5	1.6
33	0	1.5
34	0.2	1.5
35	0	1.5
36	1.5	1.6
37	1.5	1.5
38	1.5	0
39	1.5	0
40	1.5	0
41	0	0
42	4.1	4.4
43	2.8	0
44	4.1	4.4
45	1.5	0
46	1.4	0
47	1.5	1.5
48	1.5	1.5
IC2801		
1	1.5	1.5
2	0.3	0.6
3	1.4	1.4
4	1.5	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0.5	0.5
13	1.5	1.5
14	0.5	0.6
15	0.3	0.6
16	3.1	0
IC3001	-	-
IC3201	-	-
IC3501	-	-
IC3701		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	4.8	4.8
10	0	0
11	0	0
12	0	0
13	2.3	1.6
14	4.8	4.8
15	0	0
IC3731		
1	3.1	3.1
2	1.3	1.3
3	4.8	4.8
4	1.3	1.3
5	0	0
6	1.5	1.5
IC4201		
1	1.0	0
2	0.7	0
3	0.4	0
4	0	0
5	0	3.0
6	0	0
7	0	0
8	0	0
9	1.0	0
10	2.9	3.0
11	0	0
12	1.1	1.3
13	2.9	3.0
14	2.3	0
15	2.9	0
16	2.1	0
17	2.2	0
18	0	0
19	3.0	3.0
20	1.9	0
21	1.9	0
22	1.9	1.6
23	1.9	0
24	1.0	0
25	3.0	3.0
26	0	0
27	0.5	0.2
28	1.4	0
29	1.9	0
30	0.7	0
31	2.9	3.0
32	0	0
33	3.0	3.1
34	0	0
35	3.0	3.0
36	1.1	0
IC4202		
1	4.8	4.8
2	0	0
3	1.2	1.2
4	3.0	3.0
5	4.8	4.8
IC4901	-	-
IC4951		
1	0.7	0.7
2	0.1	0
3	1.5	1.5
4	0	1.5
5	0	0
6	3.0	2.8
7	0	0
8	3.0	2.9
9	0	0
10	3.0	3.0
11	1.5	1.5
12	3.1	3.1
13	4.8	4.8
14	0	0
15	0	0
16	0	0
17	0.1	0.3
18	4.8	4.8
19	0	0
20	0	0
21	0	0
22	0.1	0.4
23	0.1	0.3
24	0	0
25	0.9	0.3
26	4.8	4.8
27	0	0
28	0	0
29	0	0
30	0	0
31	0	0
32	0	0
33	0	0
34	0	0
35	4.8	4.8
36	0.8	0.4
37	0	0
38	0.5	0.5
39	0.8	0.5
40	0	0
41	0	0
42	0	0
43	4.9	4.8
44	0.8	0.5
45	0	0
46	0	0
47	0	0
48	4.9	4.8
IC5501		
1	0	0
2	3.0	3.0
3	0	0
4	3.0	3.0
5	0	0
6	3.0	2.9
7	0.3	0
8	0.3	0
9	0	0
10	3.1	0
11	1.5	0
12	3.0	3.0
13	0	0
14	1.2	0
15	0	0
16	3.0	3.0
17	0	0
18	2.2	0
19	2.3	0
20	0	0
21	0	0
22	1.2	1.2
23	0	0
24	3.0	3.0
25	-0.7	-0.6
26	3.0	0
27	2.5	0
28	3.0	0
29	0	0
30	0	0.2
31	0	0
32	3.0	0
33	0	3.0
34	1.5	0
35	0	0
36	3.0	3.0
37	0	0
38	0	0
39	0	0
40	-0.3	0
41	-7.0	0
42	-0.3	15.0
43	15.0	15.0
44	-7.0	15.0
45	-7.0	15.0
46	-7.4	0
47	0	0
48	3.1	3.1
IC6001		
1	0	0
2	7.9	7.9
3	6.8	6.8
4	9.3	9.3
5	8.2	8.2
6	8.5	8.4
7	9.6	9.6
8	8.2	8.2
9	6.2	6.2
10	0	30
11	10.8	10.8
12	12.0	12.0
13	8.4	8.4
14	1.2	1.1
15	0.7	0.7
16	1.0	1.0
17	0	0
18	3.1	3.1
19	11.0	11.0
20	11.0	11.0
21	0	0
22	0	0
23	3.1	3.1
24	3.0	3.0
25	0.78	0.8
26	0.8	0.8
27	1.0	1.0
28	0	0
29	1.0	1.0
30	0	0
31	0	0
32	0	0
33	0	0
34	0	0
35	3.1	3.1
36	0	0
37	0	0
38	0	0
39	0	0
40	0	0
41	3.1	3.1
42	0	0
43	3.0	3.1
44	0	0
45	0	0
46	0	0
47	0	0
48	3.1	3.0
49	3.0	3.1
50	0	0
51	0	0
52	0	0
53	0	0
54	0	0
55	3.1	3.0
56	0	0
57	0	0
58	2.8	2.7
59	2.7	2.6
60	0	0
61	0.3	0.3
62	0	0
63	0	0
64	3.1	3.1
IC8001	-	-
IC8002		
1	3.0	3.1
2	0	0
3	3.1	3.1
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	3.1	3.0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	3.0	3.1
16	0	0
17	0	0
18	0	0
19	0	0
20	0	0
21	0	0
22	0	0
23	0	0
24	0	0
25	0	0
26	0	0
27	0	0
28	0	0
29	0	0
30	0	0
31	0	0
32	0	0
33	0	0
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35	0	0
36	0	0
37	0	0
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39	0	0
40	0	0
41	0	0
42	0	0
43	0	0
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45	0	0
46	0	0
47	0	0
48	0	0
49	0	0
50	0	0
51	0	0
52	0	0
53	0	0
54	0	0
55	3.1	3.0
56	0	0
57	0	0
58	0	0
59	0	0
60	0	0
61	0	0
62	0	0
63	0	0
64	0	0
Q3705		
1	0.8	0.9
2	0.3	0.3
3	0	0
4	0.8	0.8
5	0.4	0.2
6	0	0
Q3706		
E	0	0
C	0	0
B	0	0
Q3707		
E	0	0
C	0	0
B	0	0
Q3731		
E	0	0
C	4.8	4.8
B	0	0
Q3733		
1	1.8	1.8
2	2.4	2.4
3	2.9	2.8
4	4.8	4.8
5	4.2	4.1
6	4.3	4.2
Q3734		
E	2.2	2.2
C	4.9	4.8
B	2.8	2.9
Q3735		
1	0	0
2	0	0
3	0	0
4	1.4	1.5
5	0.9	0.9
6	4.8	4.8
Q4951		
E	0	0
C	3.5	3.6
B	0	0
Q6101		
1	0	0
2	11.0	11.0
3	7.9	7.9
4	3.0	3.0
5	3.0	3.0
6	2.9	3.0
Q6102		
S	6.8	6.8
D	0	0
G	3.0	3.0
Q6103		
S	1.2	1.2
D	3.0	3.1
G	2.5	2.5
Q6201		
1	0	0
2	11.0	11.0
3	9.3	9.3
4	1.6	1.6
5	1.6	1.6
6	1.6	1.6
Q6202		
S	8.1	8.1
D	0	0
G	1.6	1.6
Q6301		
1	0	0
2	11.0	10.9
3	8.5	8.3
4	2.7	2.7
5	2.7	2.7
6	2.7	2.7
Q6401		
1	0	0
2	11.0	11.0
3	9.6	9.6
4	1.1	1.1
5	1.1	1.1
6	1.2	1.1
Q6501		
S	8.2	8.2
D	11.0	11.0
G	0	0
Q6502		
1	0	-7.0
2	-7.4	-7.4
3	-15.2	-15.2
4	-6.9	-7.0
5	-7.4	-7.5
6	-13.1	-14.8
Q6503		
E	-13.7	-15.2
C	-7.4	-7.5
B	-13.2	-14.9
Q6701		
S	6.2	6.2
D	11.0	11.0
G	4.9	5.0
Q6702		
S	9.8	9.8
D	4.9	4.8
G	0	0
Q6703		
S	0	0
D	4.8	4.8
G	4.8	4.8
Q6704		
E	4.8	4.8
C	0	0
B	4.8	4.8
Q6705		
E	0	0
C	4.8	4.8
B	0	0
Q8101		
E	3.1	3.1
C	0.9	0.9
B	2.7	2.6
Q8601		
1	0	0
2	3.1	3.1
3	0	0
4	0	0
5	0	0
6	0	0

<MDA>

MODE PIN NO.	REC	PLAY
IC1601		
1	0	0
2	0.3	0.5
3	0	0.5
4	0	0
5	0.4	0.5
6	0	0
7	0	0
8	1.5	1.5
9	1.5	1.5
10	1.5	1.5
11	1.5	0
12	1.5	1.5
13	1.5	1.5
14	2.7	2.7
15	1.2	1.0
16	1.5	1.5
17	1.5	1.5
18	1.2	1.5
19	1.5	1.4
20	1.5	1.5
21	3.0	3.1
22	0.7	0.7
23	0.4	0.3
24	1.4	1.4
25	1.3	1.4
26	11.0	10.4
27	0	0
28	2.7	2.7
29	0	0.7
30	1.2	1.3
31	0.7	0.7
32	0.9	0.9
33	1.3	1.3
34	1.3	1.2
35	1.3	0
36	0	0
37	1.3	1.2
38	0	0
39	1.4	1.5
40	0	0
41	0	0
42	0	0
43	0	0
44	0	0
45	4.8	4.8
46	1.5	0
47	1.5	1.5
48	1.5	1.5
49	1.5	1.5
50	0	0
51	13.9	14.0
52	2.4	2.4
53	12.5	12.4
54	0	0
55	0	0
56	0	0
57	3.0	3.0
58	2.9	2.9
59	0	0
60	1.1	1.1
61	0.3	0.3
62	1.5	1.5
63	0.7	0.7
64	1.0	1.0
Q1601	-	-

<FRONT>

MODE PIN NO.	REC	PLAY
IC401		
1	4.5	4.6
2	0	0
3	4.7	4.8
Q401		
E	0	0
C	4.5	4.5
B	-	-
Q402		
1	0	0
2	0	0
3	0	0
4	0.1	0
5	0.8	0.8
6	2.8	2.8
Q403		
1	0	0
2	0	0
3	0	0
4	0	0
5	0.8	0.8
6	2.8	2.8
Q404		
E	0	0
C	0	0
B	0.7	0.6

<MONI.OPE>

MODE PIN NO.	REC	PLAY
IC7801		
1	2.5	2.5
2	3.0	3.0
3	2.0	2.0
4	2.0	2.1
5	2.0	1.9
6	2.0	2.0
7	2.0	2.0
8	2.0	2.0
9	1.0	1.0
10	11.2	11.2
11	0	0
12	5.6	0
13	1.3	1.3
14	1.2	1.2
15	1.2	1.3
16	1.1	1.0
17	0	1.2
18	1.1	1.1
19	4.3	5.7
20	0.9	1.0
21	1.5	1.5
22	1.2	1.5
23	1.5	1.5
24	0	0
25	0.5	0
26	0	0
27	0.9	0.9
28	0.9	0.8
29	3.1	3.1
30	0	0
31	0.5	0
32	1.5	1.5
33	0.2	0.3
34	1.3	1.5
35	0	3.1
36	3.0	3.1
37	0	0
38	0	0
39	3.0	3.0
40	0	0
41	1.5	1.5
42	3.1	3.0
43	3.0	3.0
44	0	0
45	3.1	3.1
46	2.9	2.8
47	2.5	2.4
48	2.5	2.5
Q7801		
1	11.2	11.1
2	11.8	11.8
3	12.0	12.0
4	11.1	11.2
5	11.8	11.8
6	11.8	11.8
Q7802		
1	3.4	3.4
2	4.0	4.0
3	14.9	14.9
4	5.2	5.1
5	5.7	5.7
6	5.7	5.7
Q7803		
1	3.4	3.3
2	4.0	4.0
3	14.9	15.0
4	5.2	5.1
5	5.7	5.7
6	5.7	5.7
Q7804		
1	3.4	3.4
2	4.0	4.0
3	14.9	15.0
4	5.2	45.2
5	5.8	5.7
6	5.7	5.7
Q7805		
1	9.2	9.2
2	9.8	9.8
3	12.0	12.0
4	9.2	9.2
5	9.8	9.8
6	9.8	9.8
Q7806		
1	0	0
2	3.1	3.0
3	15.0	14.9
4	15.0	15.0
5	0	0
6	0	0

<MONITOR BL>

MODE PIN NO.	REC	PLAY
IC7701		
1	3.1	3.1
2	0	0
3	3.0	3.0
Q7701		
E	0	0
C	0	0
B	3.1	3.1
Q7702		
E	4.6	4.6
C	4.5	4.5
B	0	0
Q7703		
E	0.4	0.3
C	4.5	4.4
B	0	0
Q7704		
E	0.4	0.4
C	1.5	4.5
B	0	0

<VF>

MODE PIN NO.	REC	PLAY
Q7101		
E	0	0
C	0	0
B	0	0

<CCD>

MODE PIN NO.	DC
IC5001	
1	15.0
2	12.8
3	8.0
4	-7.5
5	0
6	0
7	8.6
8	0
9	15.0
10	0
11	15.0
12	0
13	0
14	10.9
Q5001	
E	10.2
C	15.0
B	10.8
Q5002	
E	0
C	8.6
B	0

JVC
Victor Company of Japan, Limited
AV & MULTIMEDIA COMPANY CAMCORDER CATEGORY 12, 3-chome, Moriya-cho, kanagawa-ku, Yokohama, kanagawa-prefecture, 221-8528, Japan

(No.YF087)

Printed in Japan
VPT

PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

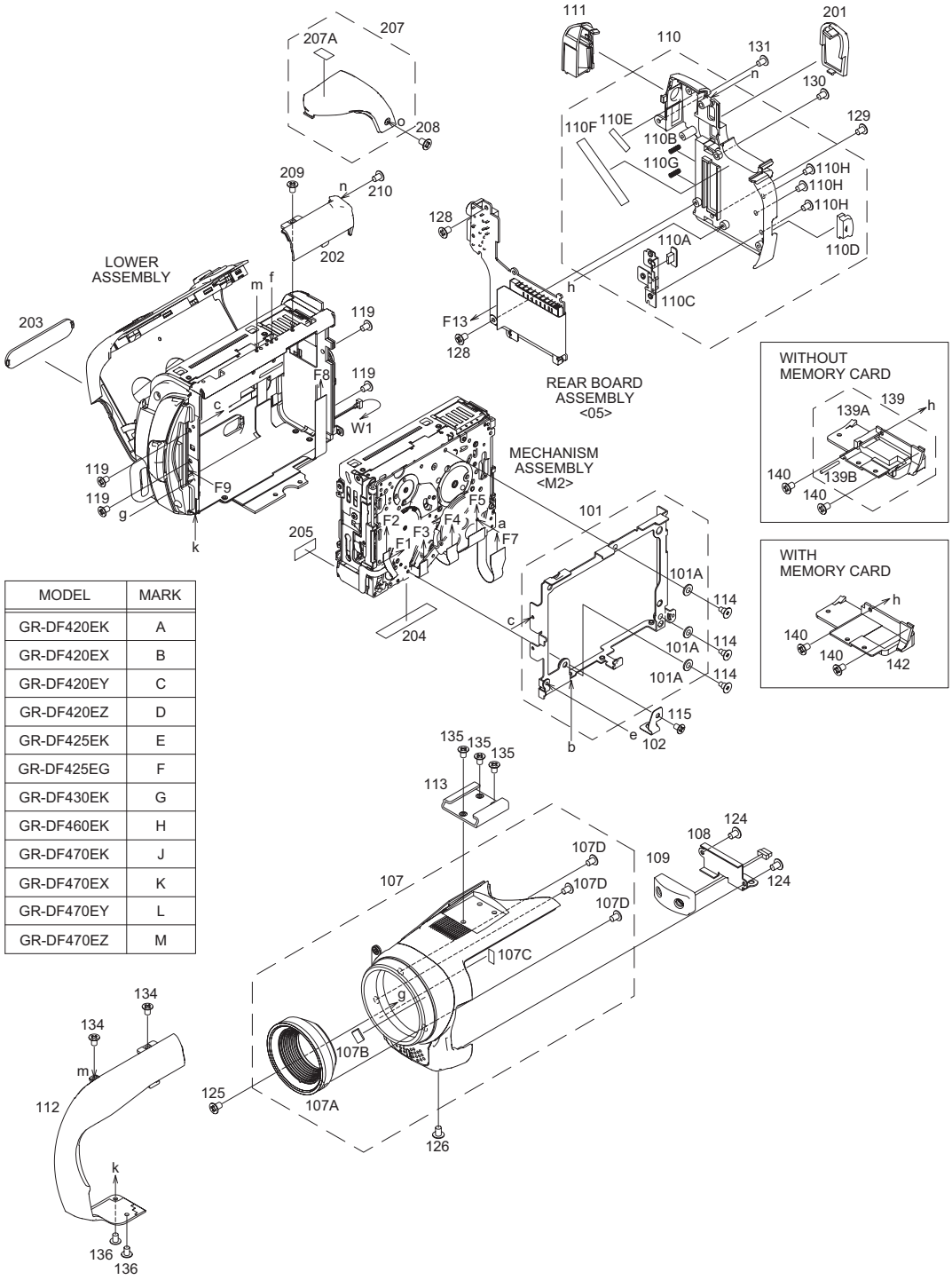
BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.

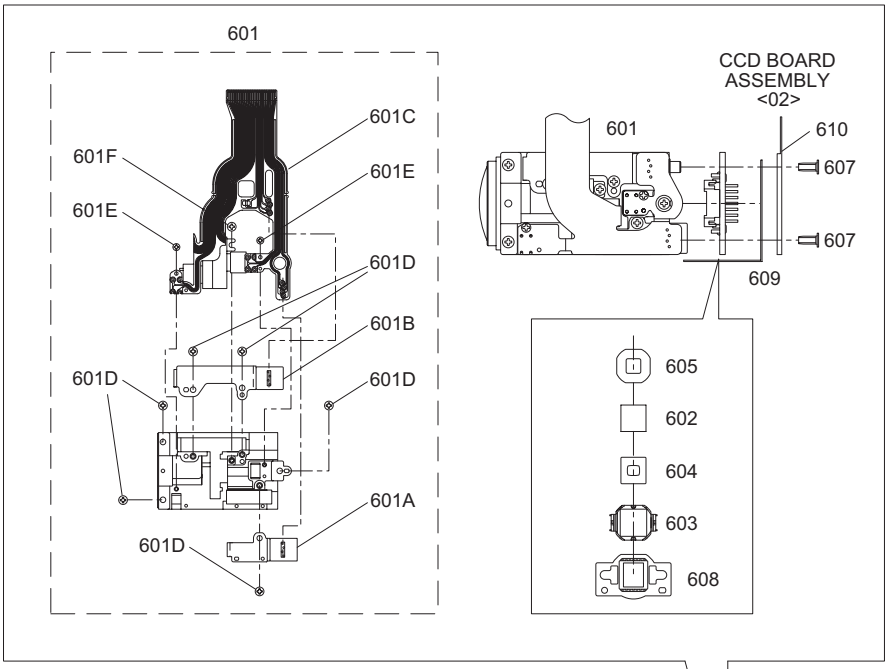
1. EXPLODED VIEW

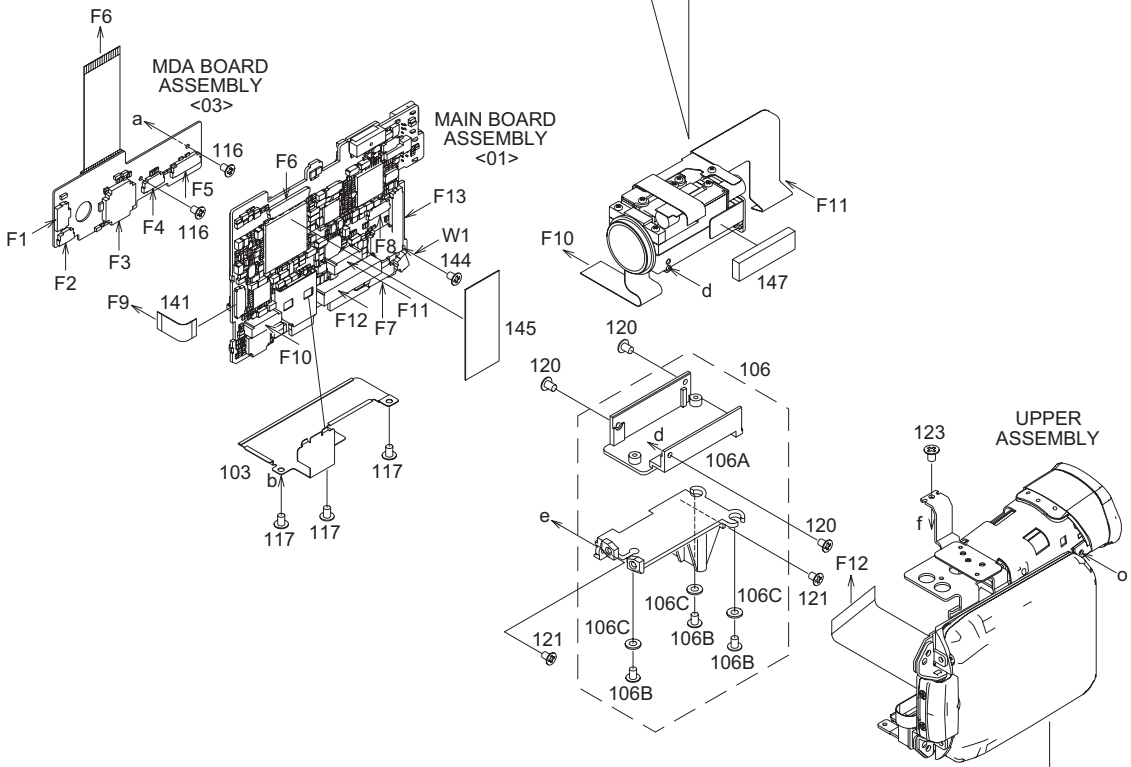
1.1 FINAL ASSEMBLY<M1>

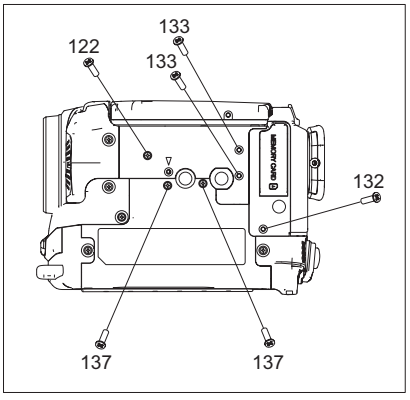
The instruction manual to be provided with this product will differ according to the destination.



MODEL	MARK
GR-DF420EK	A
GR-DF420EX	B
GR-DF420EY	C
GR-DF420EZ	D
GR-DF425EK	E
GR-DF425EG	F
GR-DF430EK	G
GR-DF460EK	H
GR-DF470EK	J
GR-DF470EX	K
GR-DF470EY	L
GR-DF470EZ	M


601
601C
601F
601E
601E
601D
601B
601D
601D
601A
601D
CCD BOARD ASSEMBLY <02>
601
610
607
607
609
605
602
604
603
608


F6
MDA BOARD ASSEMBLY <03>
a
116
F5
F4
116
F1
F3
F2
F6
MAIN BOARD ASSEMBLY <01>
F13
W1
F8
144
F9
141
F12
F7
F11
145
F10
103
b
117
117
117
F11
F10
d
147
120
106
120
d
106A
e
120
F12
121
106C
106C
106C
121
106B
106B
106B
123
UPPER ASSEMBLY
f
o
206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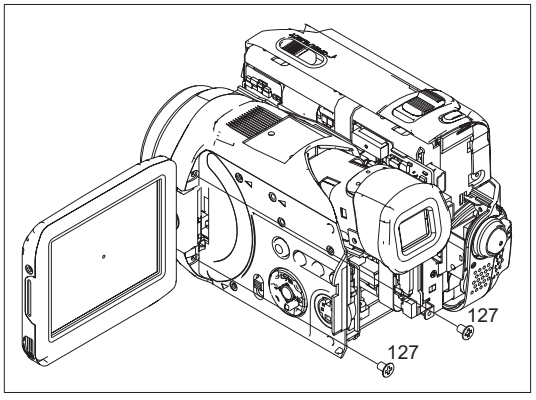
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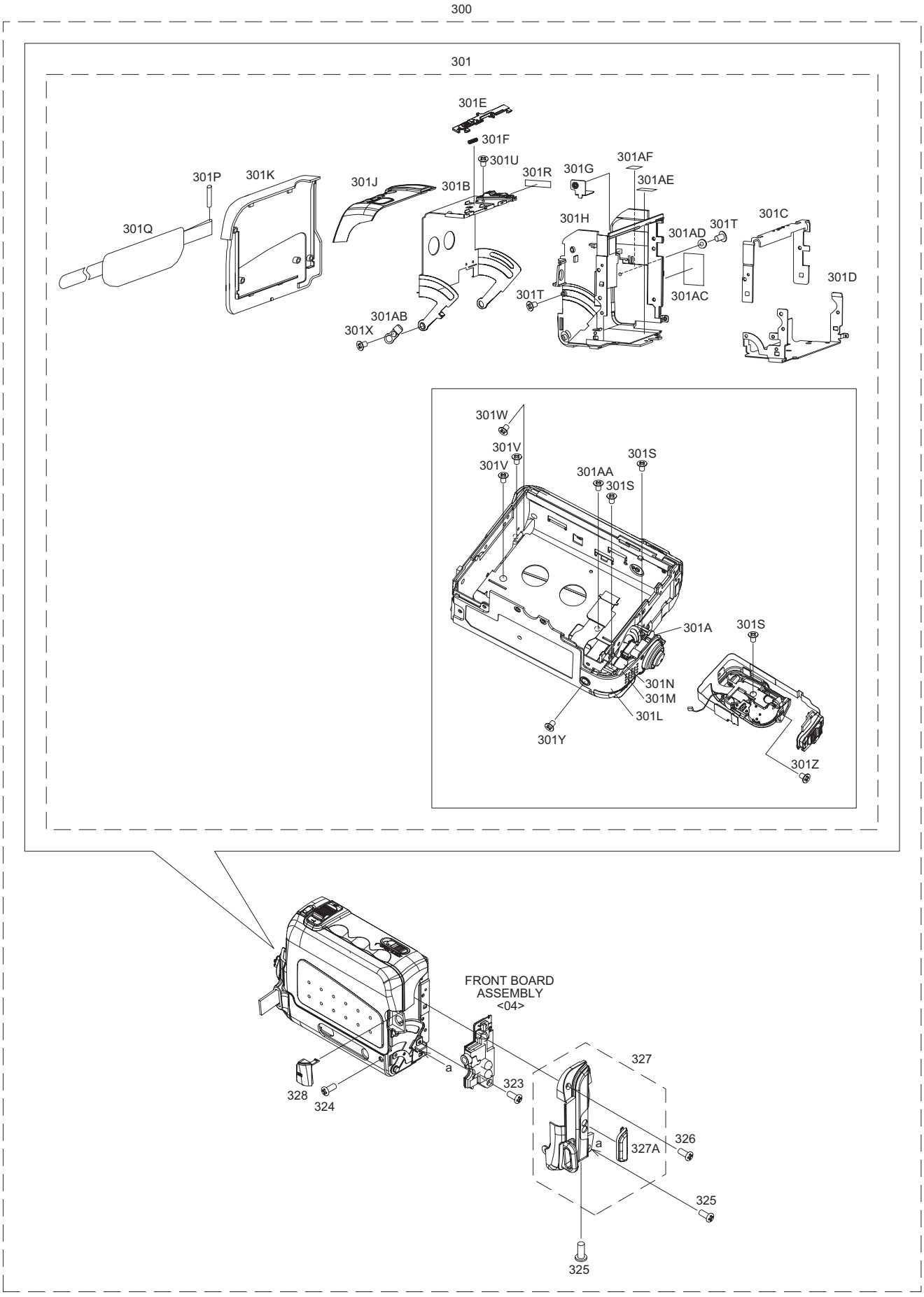
127


300
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301E
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301R
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301P
301K
301J
301B
301H
301AD
301T
301C
301Q
301T
301D
301AC
301AB
301X
301W
301V
301V
301S
301AA
301S
301A
301S
301N
301M
301L
301Y
301Z
FRONT BOARD
ASSEMBLY
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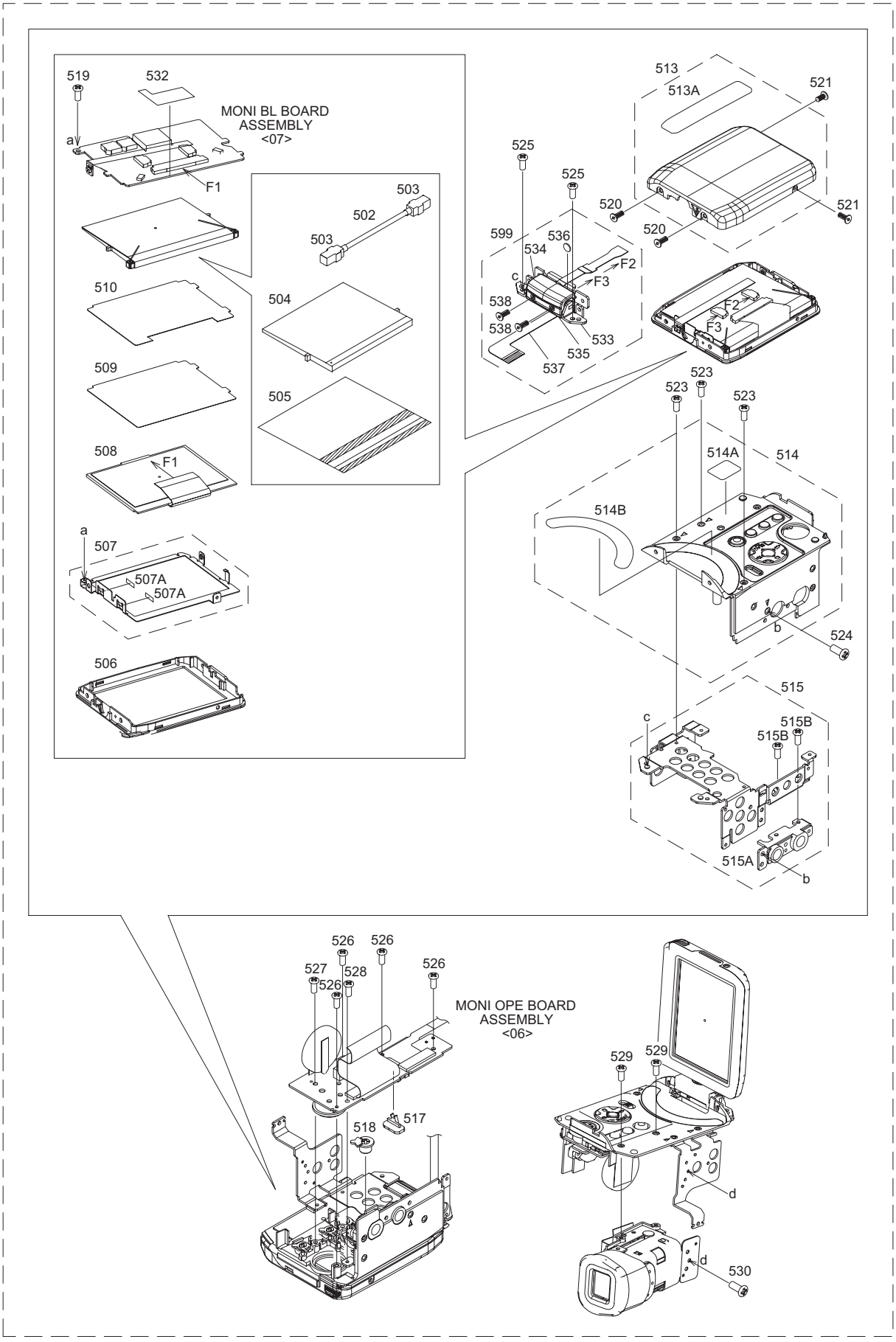
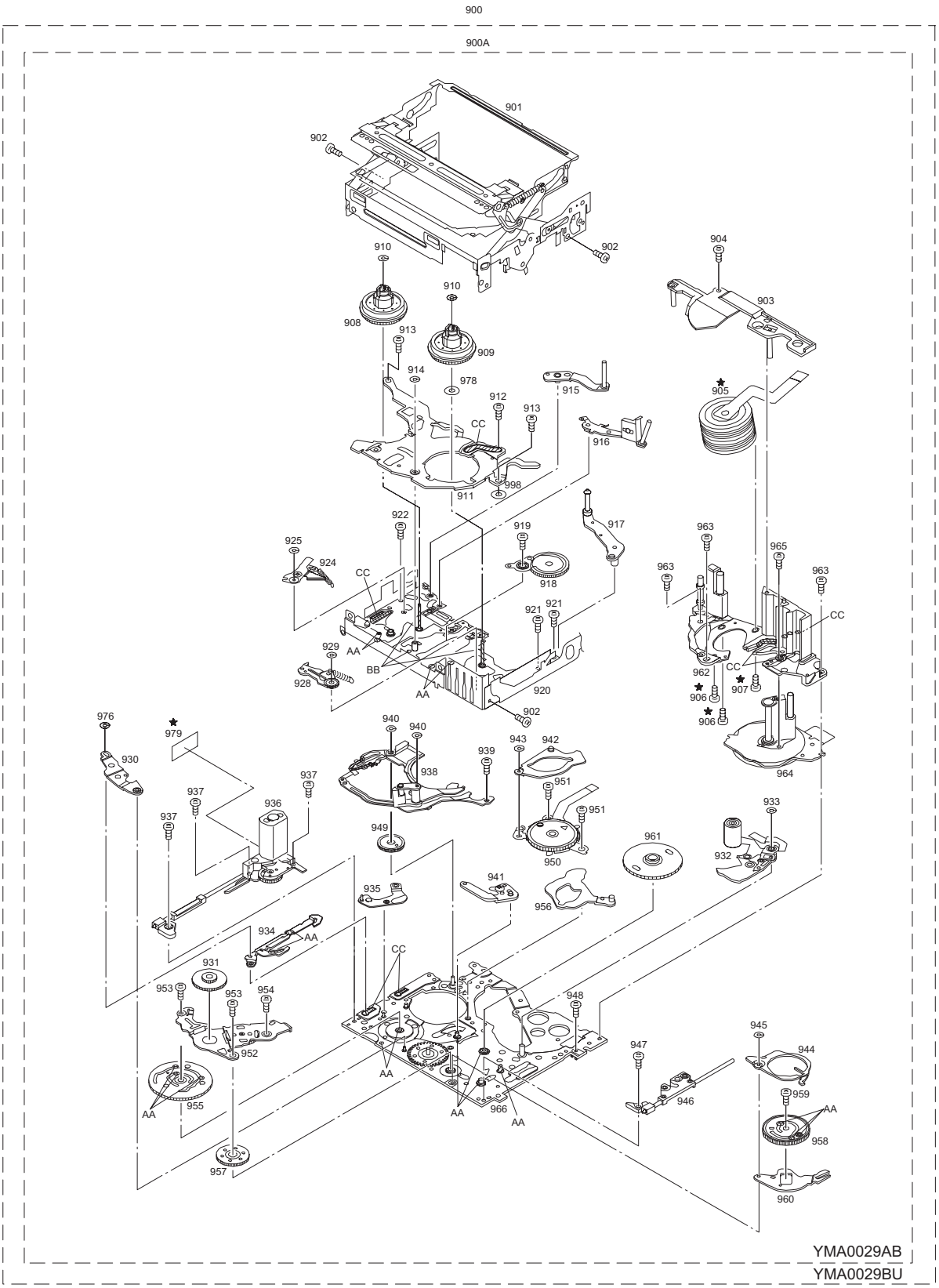
327
328
324
a
323
326
a
327A
325
325


519
532
MONI BL BOARD
ASSEMBLY
<07>
a
F1
503
502
503
510
504
509
505
508
F1
a
507
507A
507A
506
513
513A
521
525
525
520
521
520
599
536
534
F2
F3
c
538
538
533
535
537
F2
F3
523
523
523
514A
514
514B
524
b
515
c
515B
515B
515A
b
526
526
527
528
526
526
MONI OPE BOARD
ASSEMBLY
<06>
518
517
529
529
d
d
530

1.2 MECHANISM ASSEMBLY<M2>

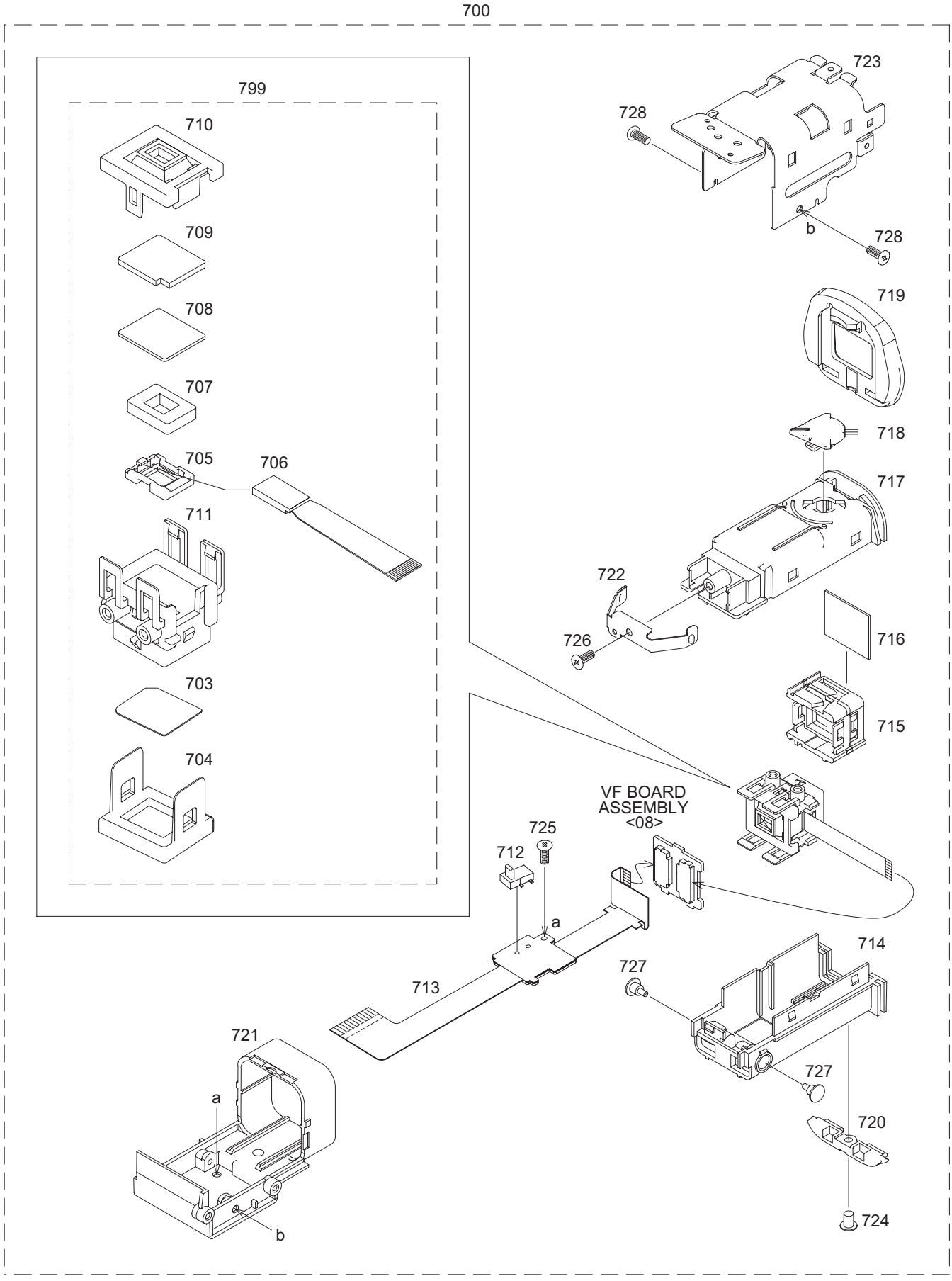


Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	YTU94027	BB
Grease	JVS-306U	CC

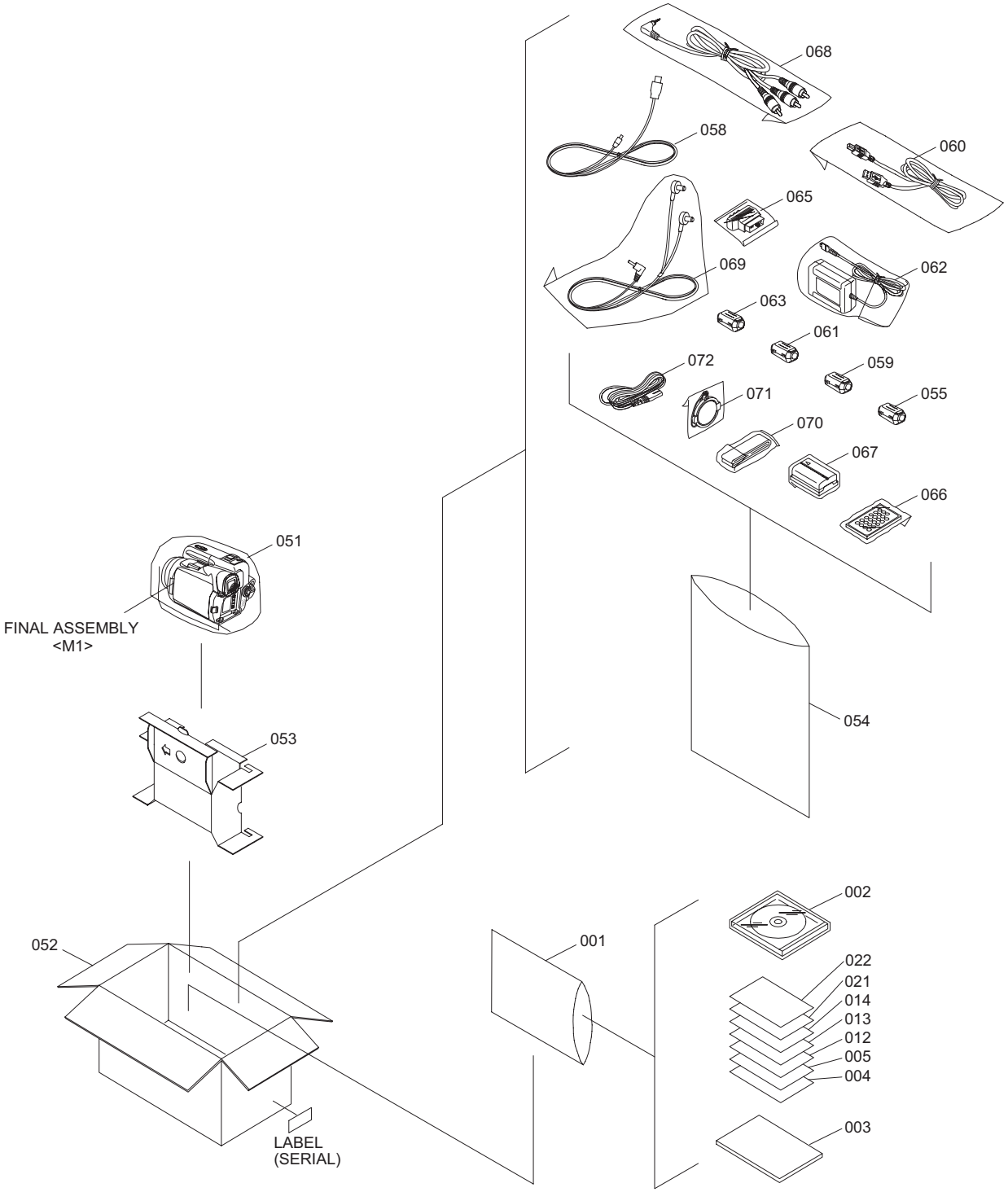
NOTE1: The section marked in AA, BB and CC indicate lubrication and greasing areas.

NOTE2: Mark ★ is not contained in 900A.

1.3 VF(COLOR) ASSEMBLY <M3>



1.5 PACKING AND ACCESSORY ASSEMBLY <M5>



MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

2. PARTS LIST

FINAL ASSEMBLY <M1>

⚠ Symbol No.	Part No.	Part Name	Description	Local
101	LY34801-001B	BKT(MECHA)ASSY		
101A	LY42796-003A	BUSH	(x3)	
102	LY34174-001A	BKT(PRE-REC)		
103	LY34803-001A	SHIELD PLATE		
106	LY34796-001C	BKT ASSY(OP N-MG)		
106A	LY34798-001A	HOLDER(OP)		
106B	LY30032-021A	SPECIAL SCREW	(x3)	
106C	LY34799-001A	BUSH	(x3)	
107	LY34769-002D	FRONT COVER(N-MG)ASSY		A,B,C,D,E,F,G
107	LY34769-001E	FRONT COVER(N-MG)ASSY		H,J,K,L,M
107A	LY34771-001A	HOOD(NON-MEGA)		
107B	LY34935-001A	EARTH(PLATE)		
107C	LY30034-0R9A	SPACER(A)		
107D	LY30031-002A	SPECIAL SCREW	(x3)	
108	LY34776-001A	BRACKET(FRONT)		
109	LY34907-001B	MIC ASSY		
⚠ 110	LY34784-002C	REAR COVER ASSY		A,B,C,D,E,F,G
⚠ 110	LY34784-001D	REAR COVER ASSY		H,J,K,L,M
110A	LY34781-001B	KNOB(MONI.LOCK)		
110B	LY30002-063A	COMPRESSION SPRING		
110C	LY34915-001B	BKT(M.LOCK)ASSY		
110D	LY34783-001A	KNOB(B.LOCK)		
110E	LY34938-001A	BKT(R GND1)		
110F	LY34939-001A	BKT(R GND2)		
110G	LY30002-064A	COMPRESSION SPRING		
110H	LY30031-0D9A	SPECIAL SCREW	BKT-RCOV(x3)	
111	LY34786-001B	JACK COVER(DC)		
112	LY10571-001B	CENTER COVER		
113	LY34795-001A	SHOE		
114	LY30032-002A	SPECIAL SCREW	MECHA-BKT(x3)	
115	LY30031-015A	SPECIAL SCREW	BKTP/R-MEC	
116	LY30031-015A	SPECIAL SCREW	MDAPWB-MEC(x2)	
117	LY30031-041A	SPECIAL SCREW	SH.P/R-M.B(x3)	
119	LY30031-0E2A	SPECIAL SCREW	MBKT-B.ARM(x4)	
120	LY30031-023A	SPECIAL SCREW	OP-HOLD OP(x3)	
121	LY30031-0E2A	SPECIAL SCREW	OPBKT-MBKT(x2)	
122	LY30031-0A7A	SPECIAL SCREW	UPPER-OPBK	
123	LY30031-0E2A	SPECIAL SCREW	FRMUP-BARM	
124	LY30031-0A7A	SPECIAL SCREW	BKT-FRONT(x2)	
125	LY30031-0E2A	SPECIAL SCREW	FRONT-BKTA	
126	LY30031-0E2A	SPECIAL SCREW	FRONT-FRMU	
127	LY30031-0A7A	SPECIAL SCREW	UPPER-FRT(x2)	
128	LY30031-0G8A	SPECIAL SCREW	RPWB-REAR(x2)	
129	LY30031-0E2A	SPECIAL SCREW	REAR-BBOTT	
130	LY30031-0J5A	SPECIAL SCREW	REAR-VF	
131	LY30031-0E2A	SPECIAL SCREW	REAR-LOWER	
132	LY30031-0E2A	SPECIAL SCREW	HOLDSD-BKT	
133	LY30031-0E2A	SPECIAL SCREW	UPPER-REAR(x2)	
134	LY30031-0E2A	SPECIAL SCREW	CTR-BKTB(x2)	
135	LY30031-0H3A	SPECIAL SCREW	SHOE-FRMUP(x3)	
136	LY30031-0E2A	SPECIAL SCREW	CTR-BKTT(x2)	
137	LY30031-0H3A	SPECIAL SCREW	LOWER-BASE(x2)	
139	LY34860-001B	COVER(SD)ASSY		H,J,K,L,M
139A	LY34825-001B	HOLDER(SD)		H,J,K,L,M
139B	LY45015-001A	SHAFT		H,J,K,L,M
140	LY30031-0G8A	SPECIAL SCREW	HLDSD-RCOV(x2)	
141	WJT0178-001A-E	E-CARD WIRE		
142	LY34780-001A	HOLDER(NON-SD)		A,B,C,D,E,F,G
144	LY30031-0E2A	SPECIAL SCREW	MAIN-MBKT	
145	LY34927-001A	HEAT SINK1	MAIN	
147	LY34928-001A	HEAT SINK2	OP	
201	LY34787-001B	JACK COVER(DV)		
202	LY34794-001B	COVER(JIG CON)		
203	LY34765-001B	COVER(ADJ)		
204	LY32001-004A	LABEL(HOUSING)		
205	LY40699-002A	LABEL(PUSH)		
206	QAM0467-002	MEMORY CARD	MMC 8MB*	H,J,K,L,M
207	LY34859-001E	COVER(TOP)ASSY		
207A	LY45054-001A	SHEET(VF)		
208	LY30031-0E1A	SPECIAL SCREW	COVTOP-VF	
209	LY30031-0E2A	SPECIAL SCREW	COVJIG-VF	
210	LY30031-0J5A	SPECIAL SCREW	COVJIG-BKT	
300	LYH20869-002A	LOWER ASSY		A,B,C,D,E,F,G
300	LYH20869-001A	LOWER ASSY		H,J,K,L,M
301	LY21364-004E	LOWER UNIT ASSY		A,B,C,D,E,F,G
301	LY21364-001F	LOWER UNIT ASSY		H,J,K,L,M
301A	LY21362-001B	POWER UNIT		
301B	LY10563-001C	ARM		
301C	LY21365-001A	BKT(ARM.TOP)		
301D	LY21366-001C	BKT(ARM.BOTTOM)		
301E	LY21367-001C	PLATE2(ARM LOCK)		
301F	LY30001-032A	TENSION SPRING		
301G	LY34852-001A	BKT LOWER		
301H	LY10564-001D	LOWER CASE		
301J	LY10565-001D	C.COVER(TOP)		A,B,C,D,E,F,G
301J	LY10565-004C	C.COVER(TOP)		H,J,K,L,M
301K	LY10566-001C	C.COVER(SIDE)		
301L	LY21369-001B	COVER(REAR)		
301M	QAS0284-001	SPEAKER		
301N	LY21370-001A	BKT(SPEAKER)		
301P	LY34767-001A	SHAFT(G.BELT)		
301Q	LY21393-001A	G. BELT ASSY		
301R	LY30034-0U1A	SPACER(A)	TO OPEZOOM	
301S	LY30031-022A	SPECIAL SCREW	BKT-C.REAR(x3)	
301T	LY30031-011A	SPECIAL SCREW	ARM-L.CASE(x2)	
301U	LY30031-0F7A	SPECIAL SCREW	POWER-CTOP	
301V	LY30031-0G8A	SPECIAL SCREW	ARM-C.COV(x2)	
301W	LY30031-0G8A	SPECIAL SCREW	ARM-C.TOP	
301X	LY30031-0F7A	SPECIAL SCREW	BKT CL-ARM	
301Y	LY30031-0E2A	SPECIAL SCREW	C.RE-A.BOT	
301Z	LY30031-0F7A	SPECIAL SCREW	C.REA-BKTL	
301AA	LY30031-0G8A	SPECIAL SCREW	BKT-POWER	
301AB	LY34960-001A	BKT CLICK ARM		
301AC	LY30034-0U8A	SPECIAL SCREW	DENPA	
301AD	LY34949-001A	WASHER		
301AE	LY45070-001A	SPACER(A)		
301AF	LY30034-0W1A	SPACER(A)	TO L.CASE	
323	LY30031-0H6A	SPECIAL SCREW	F.PWB-LOW	
324	LY30031-0E2A	SPECIAL SCREW	BKTB-COVF	
325	LY30031-0E2A	SPECIAL SCREW	COVERF-BK(x2)	
326	LY30031-023A	SPECIAL SCREW	COVERF-LO	
327	LY21368-002C	COVER(FRONT)ASSY		A,B,C,D,E,F,G
327	LY21368-001C	COVER(FRONT)ASSY		H,J,K,L,M
327A	LY34777-001A	WINDOW(LED)		H,J,K,L,M
328	LY34778-001B	JACK COVER(MIC)		
⚠ 500	LYH20867-002A	UPPER ASSY		A,B,C,D,E,F,G
⚠ 500	LYH20867-001A	UPPER ASSY		H,J,K,L,M
502	QLL0170-001	LAMP		
503	LY34806-001A	HOLDER(LAMP)	(x2)	
504	LY44832-001A	LIGHT SCREEN		
505	LY44833-001A	SHEET(REFLECT)		
506	LY21375-001B	MONITOR CASE		
507	LY34804-001B	BRACKET(LCD)ASSY		
507A	LY44962-001A	SHEET(LCD BKT)	(x2)	
508	QLD0359-001	LCD MODULE		
509	LY44963-001A	SHEET(BEF)		
510	LY44964-001B	SHEET(DIFFUSION)		
⚠ 513	LY34855-002D	M.COVER ASSY		A,B,C,D,E,F,G
⚠ 513	LY34855-001D	M.COVER ASSY		H,J,K,L,M
513A	LY45013-002A	STICKER		A,B,C,D,E,F,G
513A	LY45013-001A	STICKER		H,J,K,L,M
514	LY34788-002B	UPPER CASE ASSY		A,B,C,D,E,F,G
514	LY34788-001C	UPPER CASE ASSY		H,J,K,L,M
514A	LY45017-001A	SHEET(CAUTION)		
514B	LY44980-001A	SHEET(PROTECT)		
515	LY34793-001B	FRAME(UPPER)ASSY		
515A	LY33658-001C	BASE		
515B	LY30031-0E2A	SPECIAL SCREW	(x2)	
517	LY34792-001C	KNOB(VIDEO/DSC)		H,J,K,L,M
518	LY34791-001C	BUTTON(SET)		
519	LY30031-0H6A	SPECIAL SCREW	MONPW-BKT	
520	LY30031-013A	SPECIAL SCREW	MCOV-HINGE(x2)	
521	LY30031-0E2A	SPECIAL SCREW	MCOV-L.BKT(x2)	
523	LY30031-0E2A	SPECIAL SCREW	UPER-FRMUP(x3)	
524	LY30031-0H3A	SPECIAL SCREW	UPER-FRMUP	
525	LY30031-0G6A	SPECIAL SCREW	HINGE-FRMU(x2)	
526	LY30031-022A	SPECIAL SCREW	MOPE-UPPER(x4)	
527	LY30031-022A	SPECIAL SCREW	MOPE-UPPER	
528	LY30031-0E2A	SPECIAL SCREW	MOPE-FRMUP	
529	LY30031-022A	SPECIAL SCREW	UPPER-VF(x2)	
530	LY30031-0E2A	SPECIAL SCREW	VF-FRMUP	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

⚠ Symbol No.	Part No.	Part Name	Description	Local
532	LY44965-001B	SHIELD(LAMP)		
533	LY34808-001A	HINGE UNIT		
534	LY34809-002B	HINGE COVER(U)		A,B,C,D,E,F,G
534	LY34809-001C	HINGE COVER(U)		H,J,K,L,M
535	LY34810-001A	HINGE COVER(L)		
536	LY42355-001A	P.C.MAGNET		
537	QAL0686-001	FPC		
538	LY30031-0H3A	SPECIAL SCREW	HCOV-HINGE(x2)	
599	LY34807-002A	HINGE UNIT ASSY		
601	J4H-101A	OP BLOCK ASSY		
601A	LY44455-001A	J3H FOCUS MOTOR		
601B	LY44456-001A	J3H ZOOM MOTOR		
601C	LY44838-001A	J4H IRIS		
601D	QYSPSGU1430ZA	TAP SCREW	M1.4 x 3mm(x6)	
601E	LY44596-001A	SPECIAL SCREW	(x2)	
601F	LY44613-001A	SPECIAL SCREW		
602	LY44458-001A	OP LPF	NIHONDENP	
603	LY33816-001A	LPF HOLDER		
604	LY44461-001A	MASK		
605	LY44462-001B	SHEET		
607	LY44482-001B	SPESIAL SCREW	(x2)	
608	LYH30627-001A	CCD BASE ASSY		
609	LY34931-001A	BKT(HEAT SINK)		
610	LY34948-001A	SHIELD(CCD)		

***NOTE:**

DATA FILE is not contained in MEMORY CARD of the service part.

MECHANISM ASSEMBLY <M2>

⚠ Symbol No.	Part No.	Part Name	Description	Local
900	YMA0029BU	MECHA(A)ASSY	Y/E Y08173	
900A	YMA0029AB	MECHA(A)ASSY	JVM/BJVC	
901	LY32870-001Q	CASSETTEHOUSING ASSY		
902	LY43675-008A	MINI SCREW	(x3)	
903	LYH30420-001A	UPPER BASE ASSY		
904	QYSPSPU1425MA	SCREW	M1.4 x 2.5mm	
905	YDV2102L	DRUM ASSY	M/B SET022	
906	LY44533-001A	DAMP.SCREW ASSY	JVM/BJVC(x2)	
907	LY44533-002A	DAMP.SCREW ASSY		
908	LY31538-001G	REEL DISK ASSY		
909	LY31538-002J	REEL DISK ASSY		
910	YQ44246	SLIT WASHER	(x2)	
911	LY10372-001K	REEL COVER ASSY		
912	LY42120-002B	MINI SCREW		
913	LY41945-003B	MINI SCREW	(x2)	
914	YQ44246	SLIT WASHER		
915	LY43725-001G	TENSION ARM ASSY		
916	LY32901-001E	SLANT POLE ARM ASSY		
917	LY43731-001G	TAKE UP ARM ASSY		
918	LY31531-001E	SWING ARM ASSY		
919	YQ43893-9	MINI SCREW		
920	LYH30424-001A	SLIDE DECK FINAL ASSY		
921	YQ43893	MINI SCREW	(x2)	
922	LY43023-001A	MINI SCREW		
924	LY32900-001B	PAD ARM ASSY		
925	YQ44246	SLIT WASHER		
928	LYH40270-001A	TAKE UP BRAKE ASSY		
929	YQ44246	SLIT WASHER		
930	LY43684-001C	TENSION CONTROL LEVER ASSY		
931	LY32861-001B	CENTER GEAR		
932	LY31516-001J	PINCH ROLLER ARM FINAL ASSY		
933	YQ44246	SLIT WASHER		
934	LY43681-001B	TENSION CONTROL PLATE ASSY		
935	LY43687-001A	BRAKE CONTROL LEVER ASSY		
936	LYH30421-001A	MOTOR BRACKET ASSY		
937	YQ43893	MINI SCREW	(x3)	
938	LYH30422-001A	GUIDE RAIL ASSY		
939	YQ43893	MINI SCREW		
940	YQ44246	SLIT WASHER	(x2)	
941	LY32843-001J	SLIDE LEVER2 ASSY		
942	LY43690-001C	LOADING PLATE ASSY		
943	YQ44246	SLIT WASHER		
944	LY32858-001B	EJECT LEVER		
945	YQ44246	SLIT WASHER		
946	LYH40271-001A	BASE R ASSY		
947	YQ43893	MINI SCREW		
948	LY41945-001C	MINI SCREW		
949	LY43665-001A	MODE GEAR		
950	QSW0876-005	ROTARY ENCODER		
951	YQ43893	MINI SCREW	(x2)	
952	LY32860-001E	GEAR COVER ASSY		
953	YQ43893	MINI SCREW	(x2)	
954	LY43675-007A	MINI SCREW		
955	LY43676-001B	MAIN CAM ASSY		
956	LY41941-001B	SLIDE ARM ASSY		
957	LY43678-001A	CONNECT GEAR 2		
958	LY43679-001C	SUB CAM ASSY		
959	LY42120-001B	MINI SCREW		
960	LY43692-001B	CONTROL ARM ASSY		
961	LY32859-001B	REEL GEAR 1		
962	LY31508-003G	DRUM BASE ASSY		
963	LY43675-006C	MINI SCREW	(x3)	
964	QAR0156-002	CAPSTAN MOTOR		
965	YQ43893	MINI SCREW		
966	LY10367-001N	MAIN DECK ASSY		
976	YQ44246	SLIT WASHER		
978	LY44609-001A	WASHER		
979	LY44502-001A	SPACER	JVM/BJVC	
998	QYWFM163013	WASHER	3mm/1.6mm x 0.13mm	

VF(COLOR) ASSEMBLY <M3>

⚠ Symbol No.	Part No.	Part Name	Description	Local
700	LYH20868-001A	VF ASSY		
703	LY44845-001A	SHEET(POLA.2)		
704	LY34591-001A	STOPER(POLA)		
705	LY34584-001A	GUIDE(LCD)		
706	QLD0356-001	LCD MODULE		
707	LY44848-001B	CUSHION(LCD)		
708	LY44844-001A	SHEET(POLA.1)		
709	LY44846-001A	SHEET(DIFF)		
710	LY34590-001B	CASE(B.LIGHT)		
711	LY21395-001B	HOLDER(LCD)		
712	NSW0245-001X	LEVER SWITCH		
713	QAL0688-002	FPC	VF FPC	
714	LY21378-001E	CASE(LOWER)		
715	LY44841-002A	LENS ASSY		
716	LY44970-001B	COVER(LENS)		
717	LY21379-001C	CASE(UPPER)		
718	LY34820-001B	KNOB(ADJ)		
719	LY34822-001B	EYE CAP		
720	LY34824-001A	HOLDER(EYE CAP)		
721	LY21380-001C	HOLDER(SW)		
722	LY34821-001A	PLATE(CLICK)		
723	LY34823-001B	GUIDE(VF)		
724	LY30031-022A	SPECIAL SCREW	HLDEC-CASL	
725	LY30031-031A	SPECIAL SCREW	PWB-HLDSW	
726	LY30031-031A	SPECIAL SCREW	PLTC-CASEU	
727	LY30032-025A	SPECIAL SCREW	CASEL-GVF(x2)	
728	LY30031-031A	SPECIAL SCREW	G.VF-HLDSW(x2)	
799	LY34815-001B	HOLDER(LCD)ASSY		

PACKING AND ACCESSORY ASSEMBLY <M5>

⚠ Symbol No.	Part No.	Part Name	Description	Local
001	LY34452-001A	POLY BAG	DOCUMENT	
002	LY32210-0A9A	CD ROM ASSY		H,J,K,L,M
002	LY32210-0B1B	CD ROM ASSY		F,G
⚠ 003	LYT1393-001A	INST BOOK(EN)	(ENGLISH)	J
⚠ 003	LYT1393-002A	INST BOOK(GE)	(GERMAN)	K,L
⚠ 003	LYT1393-003A	INST BOOK(FR)	(FRENCH)	K
⚠ 003	LYT1393-004A	INST BOOK(DU)	(DUTCH)	K
⚠ 003	LYT1393-005A	INST BOOK(SP)	(SPANISH)	K
⚠ 003	LYT1393-006A	INST BOOK(IT)	(ITALIAN)	K
⚠ 003	LYT1393-007A	INST BOOK(DA)	(DANISH)	L
⚠ 003	LYT1393-008A	INST BOOK(FI)	(FINN)	L

MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

⚠	Symbol No.	Part No.	Part Name	Description	Local
⚠	003	LYT1393-009A	INST BOOK(SW)	(SWEDISH)	L
⚠	003	LYT1393-010A	INST BOOK(NO)	(NORWEGIAN)	L
⚠	003	LYT1393-011A	INST BOOK(RU)	(RUSSIAN)	M
⚠	003	LYT1393-012A	INST BOOK(CZ)	(CZECH)	M
⚠	003	LYT1393-013A	INST BOOK(PO)	(POLISH)	M
⚠	003	LYT1393-014A	INST BOOK(HU)	(HUNGARIAN)	M
⚠	003	LYT1393-015A	INST BOOK(PT)	(PORTUGUESE)	K
⚠	003	LYT1401-001A	INST BOOK(EN)	(ENGLISH)	A
⚠	003	LYT1401-002A	INST BOOK(GE)	(GERMAN)	B,C
⚠	003	LYT1401-003A	INST BOOK(FR)	(FRENCH)	B
⚠	003	LYT1401-004A	INST BOOK(DU)	(DUTCH)	B
⚠	003	LYT1401-005A	INST BOOK(SP)	(SPANISH)	B
⚠	003	LYT1401-006A	INST BOOK(IT)	(ITALIAN)	B
⚠	003	LYT1401-007A	INST BOOK(DA)	(DANISH)	C
⚠	003	LYT1401-008A	INST BOOK(FI)	(FINN)	C
⚠	003	LYT1401-009A	INST BOOK(SW)	(SWEDISH)	C
⚠	003	LYT1401-010A	INST BOOK(NO)	(NORWEGIAN)	C
⚠	003	LYT1401-011A	INST BOOK(RU)	(RUSSIAN)	D
⚠	003	LYT1401-012A	INST BOOK(CZ)	(CZECH)	D
⚠	003	LYT1401-013A	INST BOOK(PO)	(POLISH)	D
⚠	003	LYT1401-014A	INST BOOK(HU)	(HUNGARIAN)	D
⚠	003	LYT1401-015A	INST BOOK(PT)	(PORTUGUESE)	B
⚠	003	LYT1402-001A	INST BOOK(GE)	(GERMAN)	E
⚠	003	LYT1403-001A	INST BOOK(EN)	(ENGLISH)	F
⚠	003	LYT1421-001A	INST BOOK(EN)	(ENGLISH)	G,H
	004	LYT1387-001A	INST BOOK(SOFT.EN)	(SOFT.ENGLISH)	H,J
	004	LYT1387-002A	INST BOOK(SOFT.GE)	(SOFT.GERMAN)	K,L
	004	LYT1387-003A	INST BOOK(SOFT.FR)	(SOFT.FRENCH)	K
	004	LYT1387-004A	INST BOOK(SOFT.DU)	(SOFT.DUTCH)	K
	004	LYT1387-005A	INST BOOK(SOFT.SP)	(SOFT.SPANISH)	K
	004	LYT1387-006A	INST BOOK(SOFT.IT)	(SOFT.ITALIAN)	K
	004	LYT1387-007A	INST BOOK(SOFT.DA)	(SOFT.DANISH)	L
	004	LYT1387-008A	INST BOOK(SOFT.FI)	(SOFT.FINN)	L
	004	LYT1387-009A	INST BOOK(SOFT.SW)	(SOFT.SWEDISH)	L
	004	LYT1387-010A	INST BOOK(SOFT.NO)	(SOFT.NORWEGIAN)	L
	004	LYT1387-011A	INST BOOK(SOFT.RU)	(SOFT.RUSSIAN)	M
	004	LYT1387-012A	INST BOOK(SOFT.CZ)	(SOFT.CZECH)	M
	004	LYT1387-013A	INST BOOK(SOFT.PO)	(SOFT.POLISH)	M
	004	LYT1387-014A	INST BOOK(SOFT.HU)	(SOFT.HUNGARIAN)	M
	004	LYT1387-018A	INST BOOK(SOFT.PT)	(SOFT.PORTUGUESE)	K
	004	LYT1391-001B	INST BOOK(SOFT.EN)	(SOFT.ENGLISH)	F,G
	005	----------	WARRANTY CARD	BT-54026-1	
	012	LYT1412-005A	SHEET(HEAD.EKEX)		A,B,E,F,G,H,J,K
	012	LYT1412-006A	SHEET(HEAD.EY)		C,L
	012	LYT1412-007A	SHEET(HEAD.EZER)		D,M
	013	LYT0194-001B	Q.CARD		A,F,G,H,J
	014	YU30878	REGI. CARD		F,G,H,J
	021	LYT1393-016A	SHEET(ATT.)		
	022	LYT1453-001A	SHEET(ATT.DVD)		H,J
	022	LYT1453-002A	SHEET(ATT.DVD)		K,L
	022	LYT1453-003A	SHEET(ATT.DVD)		K
	022	LYT1453-004A	SHEET(ATT.DVD)		K
	022	LYT1453-005A	SHEET(ATT.DVD)		K
	022	LYT1453-006A	SHEET(ATT.DVD)		K
	022	LYT1453-007A	SHEET(ATT.DVD)		L
	022	LYT1453-008A	SHEET(ATT.DVD)		L
	022	LYT1453-009A	SHEET(ATT.DVD)		L
	022	LYT1453-010A	SHEET(ATT.DVD)		L
	022	LYT1453-011A	SHEET(ATT.DVD)		M
	022	LYT1453-012A	SHEET(ATT.DVD)		M
	022	LYT1453-013A	SHEET(ATT.DVD)		M
	022	LYT1453-014A	SHEET(ATT.DVD)		M
	022	LYT1453-018A	SHEET(ATT.DVD)		K
	051	LY30023-034A	POLY BAG		
	052	LY34832-003A	PACKING CASE		H,J,K,L,M
	052	LY34832-005A	PACKING CASE		F
	052	LY34832-007A	PACKING CASE		A,B,C,D,E
	052	LY34832-011A	PACKING CASE		G
	053	LY21382-001B	CUSHION		
	054	QPA02503505P	POLY BAG	ACC. 25cm x 35cm	
	055	QQR0918-002	CORE FILTER	AV	
	058	QAM0495-001	AUDIO CABLE	MIC	
	059	QQR0917-002	CORE FILTER	MIC 2T	
	060	QAM0538-001	USB CABLE	USB	H,J,K,L,M
	061	QQR0491-002	FERRITE CORE	USB 1T TDK (BLACK)	H,J,K,L,M
⚠	062	LY21104-001C	AC ADAPTER	AP-V14E	A,F,G,H,J
⚠	062	LY21343-001A	AC ADAPTER	AP-V17E	B,C,D,E,K,L,M
	063	QQR0917-002	CORE FILTER	DC	
	065	QAM0302-001	ADAPTOR PLUG	PERI-RCAS	
	066	LY21186-002A	REMOTE CTL UNIT	RM-V720U	A,B,C,D,E,G,H,J,K,L,M
⚠	067	LY34647-002B	BATTERY PACK	BN-VF07U	
	068	QAM0508-001	A/V CABLE	AV	
	069	QAN0060-001	MICROPHONE		H,J,K,L,M
	070	LY21397-002A	SHOULDER STRAP		
	071	LY34811-001B	HOOD CAP ASSY		
⚠	072	QMPP210-190-JR	POWER CORD(EK)	BS PLUG 1.9m BLACK	A,F,G,H,J

MAIN BOARD ASSEMBLY <01>

⚠	Symbol No.	Part No.	Part Name	Description	Local
	PW1	LYA10029-05C	MAIN BOARD ASSY		A,B,C,D,E,F
	PW1	LYA10029-04C	MAIN BOARD ASSY		G
	PW1	LYA10029-06D	MAIN BOARD ASSY		H
	PW1	LYA10029-01D	MAIN BOARD ASSY		J,K,L,M
	IC1001	MN103S97NJY	IC(MICRO C ROM)	MASK	A,B,C,D,E,F,H
	IC1001 or	MN103SF66RJY	IC(MICRO C ROM)	FLASH	A,B,C,D,E,F,H
	IC1001 or	MN103SF66RJYA	IC(MICRO C ROM)	FLASH PP	A,B,C,D,E,F,H
	IC1001	MN103S97NJT	IC(MICRO C ROM)	MASK	G,J,K,L,M
	IC1001 or	MN103SF66RJT	IC(MICRO C ROM)	FLASH	G,J,K,L,M
	IC1001 or	MN103SF66RJTA	IC(MICRO C ROM)	FLASH PP	G,J,K,L,M
	IC1002	BU3095-0FFV-X	IC	OSD KR	
	IC1003	SN74AHC1G00DC-X	IC		
	IC1004	NJU7108F3-X	IC		
	IC1004 or	TC75S56FU-X	IC		
	IC1005	M95320-WDW6-X	IC		
	IC1005 or	BR25C320FV-W-X	IC		
	IC1006	RS5C314-X	IC		
	IC1007	S-80823CNNB-G-W	IC		
	IC1009	SN74AHC1G08DC-X	IC		
	IC1701	BA10358FVM-W	IC	REELAMP5V	
	IC1702	NJM2407R-W	IC	REELSMT	
	IC2201	AK4660VQ	IC	48P0.5	
	IC2801	SN74LV4053ARG-X	IC		H,J,K,L,M
	IC3001	JCY0205	IC	BGA SOCKET	
	IC3201	JCP8075	IC		
	IC3501	JCY0132	IC		
	IC3701	BH7612FV-X	IC		
	IC3731	MM1504XN-X	IC		G,J,K,L,M
	IC4201	HD49340NP-X	IC		
	IC4202	MM1613AN-X	IC		
	IC4901	JCY0215-X	IC		A,B,C,D,E,F,G
	IC4901 or	LY34854-001A	CSP IC ASSY		A,B,C,D,E,F,G
	IC4901	JCY0214-X	IC		H,J,K,L,M
	IC4901 or	LY34853-001A	CSP IC ASSY		H,J,K,L,M
	IC4951	AN41902A	IC		
	IC5501	JCY0185	IC		
	IC6001	FA7725F	IC		
	IC8001	TMS320DSC24GHKL	IC	DSC24	H,J,K,L,M
	IC8002	K4S643232H-UC60	IC	64MSDRAM	H,J,K,L,M
	IC8003	MBPL32BM90PBC16	IC(MICRO C ROM)	32MFLASH	H,J,K,L,M
	IC8005	BH18FB1WG-W	IC	REG 1.8V	H,J,K,L,M
	IC8101	SM8707EV-G-X	IC		H,J,K,L,M
	IC8102	SN74LC1G3157K-X	IC		H,J,K,L,M
	IC8601	PIX-MC20	IC		H,J,K,L,M
	Q1001	DTA114EE-X	DIGI TRANSISTOR		
	Q1001 or	PDTA114EE-X	DIGI TRANSISTOR		
	Q1001 or	BCR183T-X	DIGI TRANSISTOR		
	Q1001 or	UN9111J-X	DIGI TRANSISTOR		
	Q1002	XP03311-W	DIGI TRANSISTOR		
	Q1002 or	UMC3N-W	DIGI TRANSISTOR		
	Q1003	XP03311-W	DIGI TRANSISTOR		
	Q1003 or	UMC3N-W	DIGI TRANSISTOR		
	Q1005	XP03311-W	DIGI TRANSISTOR		
	Q1005 or	UMC3N-W	DIGI TRANSISTOR		
	Q1006	2SC4617/QR/-X	TRANSISTOR		
	Q1006 or	BC847BT-X	TRANSISTOR		
	Q1006 or	2SD2216J/QR/-X	TRANSISTOR		
	Q1006 or	2SC4738/YG/-X	TRANSISTOR		
	Q1007	DTC124EE-X	DIGI TRANSISTOR		
	Q1007 or	PDTC124EE-X	DIGI TRANSISTOR		
	Q1007 or	BCR141T-X	DIGI TRANSISTOR		

MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

⚠ Symbol No.	Part No.	Part Name	Description	Local
Q1007	or UN9212J-X	DIGI TRANSISTOR		
Q1008	DTC144EE-X	DIGI TRANSISTOR		H,J,K,L,M
Q1008	or PDTC144EE-X	DIGI TRANSISTOR		H,J,K,L,M
Q1008	or BCR148T-X	DIGI TRANSISTOR		H,J,K,L,M
Q1008	or UN9213J-X	DIGI TRANSISTOR		H,J,K,L,M
Q1009	DTC143XE-X	DIGI TRANSISTOR		
Q1009	or UN921FJ-X	DIGI TRANSISTOR		
Q1011	DTC144EE-X	DIGI TRANSISTOR		
Q1011	or PDTC144EE-X	DIGI TRANSISTOR		
Q1011	or BCR148T-X	DIGI TRANSISTOR		
Q1011	or UN9213J-X	DIGI TRANSISTOR		
Q2201	DTC144EE-X	DIGI TRANSISTOR		
Q2201	or PDTC144EE-X	DIGI TRANSISTOR		
Q2201	or BCR148T-X	DIGI TRANSISTOR		
Q2201	or UN9213J-X	DIGI TRANSISTOR		
Q2202	UMX1N-W	PAIR TRANSISTOR		
Q2202	or PUMX1-W	PAIR TRANSISTOR		
Q2202	or BC847S-X	PAIR TRANSISTOR		
Q2202	or XP4501-W	TRANSISTOR		
Q2401	2SC4617/RS/-X	TRANSISTOR		
Q2401	or BC847BT-X	TRANSISTOR		
Q2401	or 2SD2216J/RS/-X	TRANSISTOR		
Q2403	2SC4617/RS/-X	TRANSISTOR		
Q2403	or BC847BT-X	TRANSISTOR		
Q2403	or 2SD2216J/RS/-X	TRANSISTOR		
Q3001	2SC4617/RS/-X	TRANSISTOR	AREG_3V	
Q3001	or BC847BT-X	TRANSISTOR	AREG_3V	
Q3001	or 2SD2216J/RS/-X	TRANSISTOR	AREG_3V	
Q3501	2SA2029/QRS/-X	TRANSISTOR		
Q3701	UMT1N-W	PAIR TRANSISTOR		
Q3701	or XP4401-W	TRANSISTOR		
Q3701	or BC856S-X	PAIR TRANSISTOR		
Q3701	or PUMT1-W	PAIR TRANSISTOR		
Q3702	BC847PN-X	PAIR TRANSISTOR		
Q3705	UMT1N-W	PAIR TRANSISTOR		
Q3705	or XP4401-W	TRANSISTOR		
Q3705	or BC856S-X	PAIR TRANSISTOR		
Q3705	or PUMT1-W	PAIR TRANSISTOR		
Q3706	DTC114EE-X	DIGI TRANSISTOR		
Q3706	or BCR133T-X	DIGI TRANSISTOR		
Q3706	or UN9211J-X	DIGI TRANSISTOR		
Q3706	or PDTC114EE-X	DIGI TRANSISTOR		
Q3707	DTC114EE-X	DIGI TRANSISTOR		
Q3707	or BCR133T-X	DIGI TRANSISTOR		
Q3707	or UN9211J-X	DIGI TRANSISTOR		
Q3707	or PDTC114EE-X	DIGI TRANSISTOR		
Q3731	2SC4617/RS/-X	TRANSISTOR		G,J,K,L,M
Q3731	or 2SD2216J/RS/-X	TRANSISTOR		G,J,K,L,M
Q3731	or BC847BT-X	TRANSISTOR		G,J,K,L,M
Q3733	BC847PN-X	PAIR TRANSISTOR		G,J,K,L,M
Q3734	2SC4617/RS/-X	TRANSISTOR		G,J,K,L,M
Q3734	or 2SD2216J/RS/-X	TRANSISTOR		G,J,K,L,M
Q3734	or BC847BT-X	TRANSISTOR		G,J,K,L,M
Q3735	BC847PN-X	PAIR TRANSISTOR		G,J,K,L,M
Q4951	DTC114EE-X	DIGI TRANSISTOR		
Q4951	or BCR133T-X	DIGI TRANSISTOR		
Q4951	or UN9211J-X	DIGI TRANSISTOR		
Q4951	or PDTC114EE-X	DIGI TRANSISTOR		
Q6101	QS6U24-W	MOS FET		
Q6102	RSR025N03-X	MOS FET		
Q6103	SSM3J14T-X	MOS FET		
Q6201	QS6U24-W	MOS FET		
Q6202	RSR025N03-X	MOS FET		
Q6301	QS6U24-W	MOS FET		
Q6401	QS6U24-W	MOS FET		
Q6501	SSM3J14T-X	MOS FET		
Q6502	BC856S-X	PAIR TRANSISTOR		
Q6502	or PUMT1-W	PAIR TRANSISTOR		
Q6502	or UMT1N-W	PAIR TRANSISTOR		
Q6502	or XP4401-W	TRANSISTOR		
Q6503	2SC4617/RS/-X	TRANSISTOR		
Q6503	or BC847BT-X	TRANSISTOR		
Q6503	or 2SD2216J/RS/-X	TRANSISTOR		
Q6701	SSM3J14T-X	MOS FET		
Q6702	RTF020P02-X	MOS FET		
Q6703	RTF020P02-X	MOS FET		
Q6704	2SA1577/RS/-X	TRANSISTOR		
Q6704	or BC807-25W-X	TRANSISTOR		
Q6705	DTC124TE-X	DIGI TRANSISTOR		
Q8101	2SA1774/RS/-X	TRANSISTOR		H,J,K,L,M
Q8101	or BC857BT-X	TRANSISTOR		H,J,K,L,M
Q8101	or 2SB1462J/RS/-X	TRANSISTOR		H,J,K,L,M
Q8601	EMD2-W	PAIR TRANSISTOR	VBUS SW	H,J,K,L,M
D1001	DA221-X	DIODE ARRAY		
D1001	or MA133-X	SI DIODE		
D1002	1SS376-X	SI DIODE		
D3001	RB551V-30-X	SB DIODE	PHY VDD	
D3002	EC2C01C-TR-X	VARI CAP DIODE	FS VCO	
D3003	EC2C01C-TR-X	VARI CAP DIODE	FS VCO	
D3004	EC2C01C-TR-X	VARI CAP DIODE	MAIN VCO	
D3005	DAN222-X	SI DIODE		
D3005	or MA132WK-X	SI DIODE		
D5501	1SS355-X	SI DIODE		
D5501	or MA111-X	SI DIODE		
⚠ D6001	RB715W-X	SB DIODE		
D6501	RB480Y-W	SB DIODE		
D6502	RB480Y-W	SB DIODE		
D6701	RB160M-30-X	SB DIODE		
D6702	RB160M-30-X	SB DIODE		
D6801	RB551V-30-X	SB DIODE		
C1001	NDCA1HJ-7R0W	C CAPACITOR	7pF 50V J	
C1002	NDCA1HJ-7R0W	C CAPACITOR	7pF 50V J	
C1003	NDCA1HJ-8R0W	C CAPACITOR	8pF 50V J	
C1004	NBE20JM-226X	TA E CAPACITOR	22uF 6.3V M	
C1005	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1006	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1007	NCJA0JK-105W-A	C CAPACITOR	1uF 6.3V K	
C1008	NBE20JM-226X	TA E CAPACITOR	22uF 6.3V M	
C1012	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C1013	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C1014	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C1018	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C1023	NCBA1EK-682W	C CAPACITOR	6800pF 25V K	
C1024	NCBA1EK-682W	C CAPACITOR	6800pF 25V K	
C1025	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C1029	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1031	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1032	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1033	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1034	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1035	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1036	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1038	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1039	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1040	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1041	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1042	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1044	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C1045	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C1046	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C1051	NCB31CK-223X	C CAPACITOR	0.022uF 16V K	
C1052	NCB31CK-223X	C CAPACITOR	0.022uF 16V K	
C1053	NCB31CK-223X	C CAPACITOR	0.022uF 16V K	
C1054	NCB31CK-223X	C CAPACITOR	0.022uF 16V K	
C1055	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C1701	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	J,K,L,M
C1702	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	J,K,L,M
C1703	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C2201	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2202	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2203	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2204	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2205	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2209	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2210	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2213	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2214	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2217	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2218	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2223	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2224	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2225	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	A,B,C,D,E,F,G
C2226	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	A,B,C,D,E,F,G
C2227	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	A,B,C,D,E,F,G

MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

⚠ Symbol No.	Part No.	Part Name	Description	Local
C2228	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	A,B,C,D,E,F,G
C2401	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C2402	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C2403	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C2404	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C2405	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2406	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C2603	NCBA1CK-223W	C CAPACITOR	0.022uF 16V K	
C2604	NCBA1CK-223W	C CAPACITOR	0.022uF 16V K	
C2605	NCBA1EK-472W	C CAPACITOR	4700pF 25V K	
C2606	NCBA1EK-472W	C CAPACITOR	4700pF 25V K	
C2609	NCBA1HK-332W	C CAPACITOR	3300pF 50V K	
C2610	NCBA1HK-332W	C CAPACITOR	3300pF 50V K	
C2611	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2612	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2613	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2623	NDCA1HJ-100W	C CAPACITOR	10pF 50V J	
C2624	NDCA1HJ-100W	C CAPACITOR	10pF 50V J	
C2655	NCBA1CK-473W	C CAPACITOR	0.047uF 16V K	
C2656	NCBA1CK-473W	C CAPACITOR	0.047uF 16V K	
C2801	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	H,J,K,L,M
C3001	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C3002	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3003	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C3004	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3005	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C3006	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3007	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C3008	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3009	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C3010	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3011	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C3013	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C3014	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3016	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3017	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3018	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3019	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3020	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3021	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3022	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3023	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3024	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3025	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3026	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3029	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	
C3031	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	
C3032	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3033	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3034	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3035	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3036	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3037	NCB31AK-334X	C CAPACITOR	0.33uF 10V K	
C3039	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3040	NDCA1EJ-221W	C CAPACITOR	220pF 25V J	
C3046	NCB31CK-224X	C CAPACITOR	0.22uF 16V K	
C3048	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3049	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3050	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3051	NDCA1HJ-330W	C CAPACITOR	33pF 50V J	
C3052	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3053	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	
C3054	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3055	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3056	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3057	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3058	NCBA1EK-472W	C CAPACITOR	4700pF 25V K	
C3059	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3060	NDCA1EJ-271W	C CAPACITOR	270pF 25V J	
C3061	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3062	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3063	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3064	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3065	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3066	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3067	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3068	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3069	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C3070	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3071	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3072	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3073	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3201	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C3202	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C3203	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C3204	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C3205	NBE20GM-476X	TA E CAPACITOR	47uF 4V M	
C3206	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3207	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3209	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3211	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3214	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3216	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3217	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C3219	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3220	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3221	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C3222	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3223	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3224	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3225	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3229	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3233	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3234	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3501	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C3502	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C3503	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C3504	NCBA1AK-473W	C CAPACITOR	0.047uF 10V K	
C3505	NCBA1CK-223W	C CAPACITOR	0.022uF 16V K	
C3506	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3507	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3508	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3509	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3510	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3511	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3512	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3513	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3514	NCBA1AK-473W	C CAPACITOR	0.047uF 10V K	
C3515	NCBA1AK-473W	C CAPACITOR	0.047uF 10V K	
C3516	NCBA1AK-473W	C CAPACITOR	0.047uF 10V K	
C3518	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3519	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	
C3520	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3521	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3522	NCB20JM-475X	C CAPACITOR	4.7uF 6.3V M	
C3523	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3524	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3525	NCB20JM-475X	C CAPACITOR	4.7uF 6.3V M	
C3526	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3531	NDCA1HJ-120W	C CAPACITOR	12pF 50V J	
C3532	NDCA1HJ-120W	C CAPACITOR	12pF 50V J	
C3533	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3534	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3701	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C3706	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3708	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3709	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3710	NBE20GM-226X	TA E CAPACITOR	22uF 4V M	
C3711	NBE20GM-226X	TA E CAPACITOR	22uF 4V M	
C3712	NBE20GM-107X	TA E CAPACITOR	100uF 4V M	
C3713	NBE20GM-107X	TA E CAPACITOR	100uF 4V M	
C3714	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3715	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3731	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	G,J,K,L,M
C3732	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	G,J,K,L,M
C3733	NDCA1HJ-3R0W	C CAPACITOR	3pF 50V J	G,J,K,L,M
C3734	NDCA1HJ-5R0W	C CAPACITOR	5pF 50V J	G,J,K,L,M
C3735	NDCA1HJ-330W	C CAPACITOR	33pF 50V J	G,J,K,L,M
C3736	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	G,J,K,L,M
C3738	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	G,J,K,L,M
C3739	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	G,J,K,L,M
C3740	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	G,J,K,L,M
C3741	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	G,J,K,L,M
C3742	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	G,J,K,L,M
C3743	NDCA1HJ-3R0W	C CAPACITOR	3pF 50V J	G,J,K,L,M
C3744	NDCA1HJ-5R0W	C CAPACITOR	5pF 50V J	G,J,K,L,M

MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

⚠ Symbol No.	Part No.	Part Name	Description	Local
C3745	NDCA1HJ-330W	C CAPACITOR	33pF 50V J	G,J,K,L,M
C3746	NCB20JM-475X	C CAPACITOR	4.7uF 6.3V M	G,J,K,L,M
C3747	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	G,J,K,L,M
C4201	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4202	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C4203	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C4204	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4205	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4206	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4207	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C4208	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C4209	NCBA1CK-223W	C CAPACITOR	0.022uF 16V K	
C4210	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4211	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4212	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4213	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4214	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4215	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4216	NBE20JM-226X	TA E CAPACITOR	22uF 6.3V M	
C4217	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4902	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C4904	NBE21AM-106X	TA E CAPACITOR	10uF 10V M	
C4905	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4906	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4907	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4908	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4909	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4912	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4913	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4914	NDCA1HJ-680W	C CAPACITOR	68pF 50V J	
C4915	NDCA1HJ-121W	C CAPACITOR	120pF 50V J	
C4916	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4917	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4918	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4921	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4922	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4952	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C4954	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C4956	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C4957	NDCA1HJ-220W	C CAPACITOR	22pF 50V J	
C4958	NDCA1HJ-220W	C CAPACITOR	22pF 50V J	
C5501	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5502	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5503	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5504	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5505	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5506	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5507	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5508	NBP21VM-105X	TA E CAPACITOR	1uF 35V M	
C5509	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5510	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C5511	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5512	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5513	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C5514	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5515	NBE20GM-476X	TA E CAPACITOR	47uF 4V M	
C5516	NBP41EM-475X-B	TA E CAPACITOR	4.7uF 25V M	
C5517	NBP21CM-106X	TA E CAPACITOR	10uF 16V M	
C5518	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5519	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C5520	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C6005	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6006	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C6007	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C6008	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6009	NCB31AK-224X	C CAPACITOR	0.22uF 10V K	
C6010	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C6011	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6101	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6102	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C6103	NCBA1HK-221W	C CAPACITOR	220pF 50V K	
C6104	NCBA1HK-681W	C CAPACITOR	680pF 50V K	
C6105	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C6106	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C6107	NCBA1CK-223W	C CAPACITOR	0.022uF 16V K	
C6201	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6202	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C6203	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	
C6204	NCBA1HK-221W	C CAPACITOR	220pF 50V K	
C6301	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6302	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6303	NCBA1AK-683W	C CAPACITOR	0.068uF 10V K	
C6305	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C6401	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6402	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6403	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C6405	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C6501	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6502	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6503	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6505	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6506	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6508	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6509	NCBA1AK-333W	C CAPACITOR	0.033uF 10V K	
C6510	NCBA1AK-473W	C CAPACITOR	0.047uF 10V K	
C6511	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C6512	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6701	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6702	NCB41CK-106X	C CAPACITOR	10uF 16V K	
C6704	NCBA1EK-472W	C CAPACITOR	4700pF 25V K	
C6705	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C6706	NCBA1HK-221W	C CAPACITOR	220pF 50V K	
C6707	NCBA1HK-821W	C CAPACITOR	820pF 50V K	
C6802	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C6803	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	
C6804	NCBA1HK-392W	C CAPACITOR	3900pF 50V K	
C8001	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	H,J,K,L,M
C8002	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	H,J,K,L,M
C8003	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8004	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8005	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8006	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8007	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8008	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8009	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8010	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8011	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	H,J,K,L,M
C8012	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8013	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8018	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8021	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	H,J,K,L,M
C8022	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	H,J,K,L,M
C8023	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8024	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8025	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	H,J,K,L,M
C8026	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8027	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8028	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8029	NCB30JK-225X	C CAPACITOR	2.2uF 6.3V K	H,J,K,L,M
C8032	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
C8101	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8102	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8103	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	H,J,K,L,M
C8104	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	H,J,K,L,M
C8105	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	H,J,K,L,M
C8601	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	H,J,K,L,M
C8602	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	H,J,K,L,M
C8603	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	H,J,K,L,M
C8606	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8607	NCJA0JK-105W-A	C CAPACITOR	1uF 6.3V K	H,J,K,L,M
C8608	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8609	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8610	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8611	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8612	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8613	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8614	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8615	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8616	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8617	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8618	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
C8619	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	H,J,K,L,M
C8620	NCJA0JK-105W-A	C CAPACITOR	1uF 6.3V K	H,J,K,L,M
C8621	NDCA1HJ-7R0W	C CAPACITOR	7pF 50V J	H,J,K,L,M
C8622	NDCA1HJ-7R0W	C CAPACITOR	7pF 50V J	H,J,K,L,M
C8623	NCJA0JK-105W-A	C CAPACITOR	1uF 6.3V K	H,J,K,L,M

MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

⚠ Symbol No.	Part No.	Part Name	Description	Local
C8624	NCJA0JK-105W-A	C CAPACITOR	1uF 6.3V K	H,J,K,L,M
C8626	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	H,J,K,L,M
C8627	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	H,J,K,L,M
R1001	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R1002	NRSA6AJ-470W	MG RESISTOR	47Ω 1/16W J	
R1003	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1004	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R1007	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1008	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R1010	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1012	NRSA6AJ-823W	MG RESISTOR	82kΩ 1/16W J	
R1013	NRSA6AJ-623W	MG RESISTOR	62kΩ 1/16W J	
R1014	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1015	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1016	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1017	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R1018	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1019	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1020	NRSA6AJ-753W	MG RESISTOR	75kΩ 1/16W J	
R1021	NRSA6AJ-334W	MG RESISTOR	330kΩ 1/16W J	
R1022	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R1023	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R1024	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R1025	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R1026	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R1027	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R1029	NRSA6AJ-152W	MG RESISTOR	1.5kΩ 1/16W J	
R1030	NRSA6AJ-273W	MG RESISTOR	27kΩ 1/16W J	
R1031	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1032	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1033	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1034	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1035	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1036	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1041	NRSA6AJ-561W	MG RESISTOR	560Ω 1/16W J	
R1043	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R1045	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1046	NRSA6AJ-153W	MG RESISTOR	15kΩ 1/16W J	
R1047	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1048	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1049	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1050	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1051	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R1052	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1053	NRSA6AJ-154W	MG RESISTOR	150kΩ 1/16W J	
R1054	NRSA6AJ-272W	MG RESISTOR	2.7kΩ 1/16W J	
R1055	NRSA6AJ-183W	MG RESISTOR	18kΩ 1/16W J	
R1056	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R1057	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R1058	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1059	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R1060	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R1061	NRSA6AJ-393W	MG RESISTOR	39kΩ 1/16W J	
R1063	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R1064	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1065	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R1066	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1067	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1068	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1069	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1070	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1071	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1072	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R1073	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R1074	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R1075	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R1076	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1077	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1078	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1080	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1081	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R1082	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R1083	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1084	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1085	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1086	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1089	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1090	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1091	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1092	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1093	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1094	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1095	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1096	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1097	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1098	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1099	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1100	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1101	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1103	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1104	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1105	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1106	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1108	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1109	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1110	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1112	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1117	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R1118	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1119	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1120	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1121	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1122	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1123	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R1124	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R1125	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R1126	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R1127	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R1128	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R1132	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1146	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1147	NRSA6AJ-334W	MG RESISTOR	330kΩ 1/16W J	
R1148	NRSA6AJ-224W	MG RESISTOR	220kΩ 1/16W J	
R1701	NRSA6AJ-823W	MG RESISTOR	82kΩ 1/16W J	
R1702	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R1703	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R1704	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R1705	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R1706	NRSA6AJ-823W	MG RESISTOR	82kΩ 1/16W J	
R1707	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1708	NRSA6AJ-124W	MG RESISTOR	120kΩ 1/16W J	
R1709	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1710	NRSA6AJ-124W	MG RESISTOR	120kΩ 1/16W J	
R1711	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1712	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R2001	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R2004	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R2201	NRSA6AJ-224W	MG RESISTOR	220kΩ 1/16W J	
R2202	NRSA6AJ-564W	MG RESISTOR	560kΩ 1/16W J	
R2203	NRSA6AJ-393W	MG RESISTOR	39kΩ 1/16W J	
R2204	NRSA6AJ-154W	MG RESISTOR	150kΩ 1/16W J	
R2206	NRSA6AJ-333W	MG RESISTOR	33kΩ 1/16W J	
R2207	NRSA6AJ-333W	MG RESISTOR	33kΩ 1/16W J	
R2208	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R2209	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R2210	NRSA6AJ-821W	MG RESISTOR	820Ω 1/16W J	
R2211	NRSA6AJ-821W	MG RESISTOR	820Ω 1/16W J	
R2212	NRSA6AJ-2R7W	MG RESISTOR	2.7Ω 1/16W J	
R2213	NRSA6AJ-2R7W	MG RESISTOR	2.7Ω 1/16W J	
R2217	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R2231	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R2233	NRSA6AJ-564W	MG RESISTOR	560kΩ 1/16W J	
R2234	NRSA6AJ-564W	MG RESISTOR	560kΩ 1/16W J	
R2235	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R2401	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R2402	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R2403	NRSA6AJ-183W	MG RESISTOR	18kΩ 1/16W J	
R2407	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R2601	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R2602	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R2607	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R2608	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R2609	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R2610	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R2618	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

⚠ Symbol No.	Part No.	Part Name	Description	Local
R2619	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R2801	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R2802	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R2803	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R2804	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R2805	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R3001	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R3002	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R3004	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R3005	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3006	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R3008	NRSA6AJ-224W	MG RESISTOR	220kΩ 1/16W J	
R3009	NRSA6AJ-224W	MG RESISTOR	220kΩ 1/16W J	
R3010	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R3011	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R3012	NRSA6AJ-821W	MG RESISTOR	820Ω 1/16W J	
R3013	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R3014	NRSA6AJ-821W	MG RESISTOR	820Ω 1/16W J	
R3020	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	H,J,K,L,M
R3021	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R3022	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R3025	NRSA6AJ-121W	MG RESISTOR	120Ω 1/16W J	
R3026	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R3028	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3029	NRSA6AJ-224W	MG RESISTOR	220kΩ 1/16W J	
R3030	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3031	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3032	NRSA6AJ-392W	MG RESISTOR	3.9kΩ 1/16W J	
R3033	NRSA6AJ-392W	MG RESISTOR	3.9kΩ 1/16W J	
R3034	NRSA6AD-560W	MG RESISTOR	56Ω 1/16W D	
R3035	NRSA6AD-560W	MG RESISTOR	56Ω 1/16W D	
R3036	NRSA6AD-560W	MG RESISTOR	56Ω 1/16W D	
R3037	NRSA6AD-560W	MG RESISTOR	56Ω 1/16W D	
R3038	NRSA6AD-512W	MG RESISTOR	5.1kΩ 1/16W D	
R3040	NRSA6AJ-242W	MG RESISTOR	2.4kΩ 1/16W J	
R3043	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3045	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3051	NRSA6AJ-151W	MG RESISTOR	150Ω 1/16W J	
R3054	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3055	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3056	NRSA6AJ-683W	MG RESISTOR	68kΩ 1/16W J	
R3057	NRSA6AJ-683W	MG RESISTOR	68kΩ 1/16W J	
R3060	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R3061	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3063	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3064	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3065	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R3066	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3067	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R3068	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3069	NRSA6AJ-470W	MG RESISTOR	47Ω 1/16W J	H,J,K,L,M
R3070	NRSA6AJ-470W	MG RESISTOR	47Ω 1/16W J	
R3071	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3072	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3073	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3074	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3076	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3078	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3081	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	H,J,K,L,M
R3082	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	H,J,K,L,M
R3083	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	H,J,K,L,M
R3084	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	H,J,K,L,M
R3085	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R3089	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R3090	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3092	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3093	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R3094	NRSA6AJ-563W	MG RESISTOR	56kΩ 1/16W J	
R3095	NRSA6AJ-563W	MG RESISTOR	56kΩ 1/16W J	
R3097	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	A,B,C,D,E,F,G
R3097	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	H,J,K,L,M
R3201	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3202	NRSA6AD-183W	MG RESISTOR	18kΩ 1/16W D	
R3203	NRSA6AD-123W	MG RESISTOR	12kΩ 1/16W D	
R3204	NRSA6AD-821W	MG RESISTOR	820Ω 1/16W D	
R3205	NRSA6AD-821W	MG RESISTOR	820Ω 1/16W D	
R3207	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3212	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3213	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3214	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3501	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R3502	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R3503	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R3504	NRVA6AD-241W	CMF RESISTOR	240Ω 1/16W D	
R3505	NRVA6AD-241W	CMF RESISTOR	240Ω 1/16W D	
R3506	NRVA6AD-241W	CMF RESISTOR	240Ω 1/16W D	
R3507	NRVA6AD-241W	CMF RESISTOR	240Ω 1/16W D	
R3508	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R3512	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3513	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R3514	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R3515	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R3516	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3517	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3518	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3519	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3701	NRSA6AD-271W	MG RESISTOR	270Ω 1/16W D	
R3703	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R3704	NRSA6AD-301W	MG RESISTOR	300Ω 1/16W D	
R3707	NRSA6AD-680W	MG RESISTOR	68Ω 1/16W D	
R3708	NRSA6AD-680W	MG RESISTOR	68Ω 1/16W D	
R3709	NRSA6AD-680W	MG RESISTOR	68Ω 1/16W D	
R3710	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3712	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R3713	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R3714	NRSA6AJ-823W	MG RESISTOR	82kΩ 1/16W J	
R3715	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3718	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3722	NRSA6AD-151W	MG RESISTOR	150Ω 1/16W D	
R3724	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3725	NRSA6AD-151W	MG RESISTOR	150Ω 1/16W D	
R3726	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3727	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3728	NRSA6AD-151W	MG RESISTOR	150Ω 1/16W D	
R3730	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3731	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	G,J,K,L,M
R3732	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	G,J,K,L,M
R3733	NRSA6AD-561W	MG RESISTOR	560Ω 1/16W D	G,J,K,L,M
R3734	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	G,J,K,L,M
R3735	NRSA6AD-182W	MG RESISTOR	1.8kΩ 1/16W D	G,J,K,L,M
R3736	NRSA6AJ-183W	MG RESISTOR	18kΩ 1/16W J	G,J,K,L,M
R3737	NRSA6AJ-183W	MG RESISTOR	18kΩ 1/16W J	G,J,K,L,M
R3738	NRSA6AJ-681W	MG RESISTOR	680Ω 1/16W J	G,J,K,L,M
R3739	NRSA6AJ-821W	MG RESISTOR	820Ω 1/16W J	G,J,K,L,M
R3740	NRSA6AJ-821W	MG RESISTOR	820Ω 1/16W J	G,J,K,L,M
R3741	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	G,J,K,L,M
R3744	NRSA6AD-561W	MG RESISTOR	560Ω 1/16W D	G,J,K,L,M
R3745	NRSA6AD-152W	MG RESISTOR	1.5kΩ 1/16W D	G,J,K,L,M
R3746	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	G,J,K,L,M
R3747	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	G,J,K,L,M
R3748	NRSA6AJ-474W	MG RESISTOR	470kΩ 1/16W J	G,J,K,L,M
R4201	NRSA6AJ-333W	MG RESISTOR	33kΩ 1/16W J	
R4202	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R4203	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R4204	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R4205	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4206	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4901	NRSA6AJ-243W	MG RESISTOR	24kΩ 1/16W J	
R4902	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4903	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R4904	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4905	NRSA6AJ-153W	MG RESISTOR	15kΩ 1/16W J	
R4906	NRSA6AJ-564W	MG RESISTOR	560kΩ 1/16W J	
R4907	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R4908	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R4909	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R4910	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4911	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4912	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4917	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4918	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4923	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R4924	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R4935	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R4944	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4945	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

⚠ Symbol No.	Part No.	Part Name	Description	Local
R4951	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R4952	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R4953	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R4954	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R4955	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4956	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω 1/16W J	
R4957	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω 1/16W J	
R4959	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω 1/16W J	
R4960	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω 1/16W J	
R4961	NRSA6AJ-271W	MG RESISTOR	270Ω 1/16W J	
R5501	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R5502	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R5503	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R5504	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5505	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5506	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5507	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5508	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5509	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5510	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R6001	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R6005	NRSA6AD-303W	MG RESISTOR	30kΩ 1/16W D	
R6007	NRSA6AD-473W	MG RESISTOR	47kΩ 1/16W D	
R6008	NRSA6AD-823W	MG RESISTOR	82kΩ 1/16W D	
R6009	NRSA6AD-333W	MG RESISTOR	33kΩ 1/16W D	
⚠ R6010	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R6103	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R6104	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6105	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R6106	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R6107	NRSA6AD-243W	MG RESISTOR	24kΩ 1/16W D	
R6108	NRSA6AD-363W	MG RESISTOR	36kΩ 1/16W D	
R6110	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R6203	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6204	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R6303	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R6304	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R6305	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R6403	NRSA6AJ-273W	MG RESISTOR	27kΩ 1/16W J	
R6404	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R6503	NRSA6AD-823W	MG RESISTOR	82kΩ 1/16W D	
R6504	NRSA6AD-823W	MG RESISTOR	82kΩ 1/16W D	
R6505	NRSA6AJ-185W	MG RESISTOR	1.8MΩ 1/16W J	
R6506	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R6507	NRSA6AJ-333W	MG RESISTOR	33kΩ 1/16W J	
R6508	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R6512	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R6513	NRSA6AJ-272W	MG RESISTOR	2.7kΩ 1/16W J	
R6701	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6702	NRV142F-R20X	CMF RESISTOR	0.2Ω 1/4W F	
R6704	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R6705	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R6706	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R6707	NRSA6AJ-152W	MG RESISTOR	1.5kΩ 1/16W J	
R6708	NRSA6AJ-153W	MG RESISTOR	15kΩ 1/16W J	
R6709	NRSA6AJ-114W	MG RESISTOR	110kΩ 1/16W J	
R6710	NRSA6AJ-124W	MG RESISTOR	120kΩ 1/16W J	
R6712	NRSA6AJ-561W	MG RESISTOR	560Ω 1/16W J	
R6713	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R6714	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R6715	NRSA6AD-472W	MG RESISTOR	4.7kΩ 1/16W D	
R6716	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R6717	NRSA6AD-183W	MG RESISTOR	18kΩ 1/16W D	
R6718	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6802	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R6803	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R8002	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
R8008	NRSA6AJ-561W	MG RESISTOR	560Ω 1/16W J	H,J,K,L,M
R8009	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	H,J,K,L,M
R8011	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R8012	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R8015	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	H,J,K,L,M
R8016	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
R8017	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
R8019	NRSA6AJ-221W	MG RESISTOR	220Ω 1/16W J	H,J,K,L,M
R8021	NRSA6AJ-221W	MG RESISTOR	220Ω 1/16W J	H,J,K,L,M
R8022	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R8023	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	H,J,K,L,M
R8025	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	H,J,K,L,M
R8031	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	H,J,K,L,M
R8032	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R8033	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R8036	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	H,J,K,L,M
R8041	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	H,J,K,L,M
R8042	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	H,J,K,L,M
R8043	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R8046	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	H,J,K,L,M
R8050	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R8051	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R8055	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R8101	NRSA6AJ-470W	MG RESISTOR	47Ω 1/16W J	H,J,K,L,M
R8103	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	H,J,K,L,M
R8106	NRSA6AJ-221W	MG RESISTOR	220Ω 1/16W J	H,J,K,L,M
R8602	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
R8603	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
R8615	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	H,J,K,L,M
R8618	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	H,J,K,L,M
R8619	NRVA6AD-622W	CMF RESISTOR	6.2kΩ 1/16W D	H,J,K,L,M
R8621	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	H,J,K,L,M
R8622	NRSA6AJ-154W	MG RESISTOR	150kΩ 1/16W J	H,J,K,L,M
R8623	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	H,J,K,L,M
RA1001	NRZ0034-473W	NET RESISTOR	47kΩ 1/32W J	
RA1003	NRZ0034-104W	NET RESISTOR	100kΩ 1/32W J	
RA1004	NRZ0034-104W	NET RESISTOR	100kΩ 1/32W J	
RA3003	NRZ0034-100W	NET RESISTOR	10Ω 1/32W J	
RA3004	NRZ0034-100W	NET RESISTOR	10Ω 1/32W J	
RA3005	NRZ0034-100W	NET RESISTOR	10Ω 1/32W J	H,J,K,L,M
RA3006	NRZ0034-100W	NET RESISTOR	10Ω 1/32W J	H,J,K,L,M
RA3007	NRZ0034-100W	NET RESISTOR	10Ω 1/32W J	H,J,K,L,M
RA3008	NRZ0034-100W	NET RESISTOR	10Ω 1/32W J	H,J,K,L,M
RA3009	NRZ0034-100W	NET RESISTOR	10Ω 1/32W J	H,J,K,L,M
RA3010	NRZ0034-100W	NET RESISTOR	10Ω 1/32W J	H,J,K,L,M
RA3011	NRZ0034-100W	NET RESISTOR	10Ω 1/32W J	
RA3012	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J	
RA3201	NRZ0034-100W	NET RESISTOR	10Ω 1/32W J	
RA3202	NRZ0034-100W	NET RESISTOR	10Ω 1/32W J	
RA4201	NRZ0034-0R0W	NET RESISTOR	0Ω 1/32W J	
RA4202	NRZ0034-0R0W	NET RESISTOR	0Ω 1/32W J	
RA8001	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J	H,J,K,L,M
RA8002	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J	H,J,K,L,M
RA8003	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J	H,J,K,L,M
RA8004	NRZ0034-101W	NET RESISTOR	100Ω 1/32W J	H,J,K,L,M
RA8005	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J	H,J,K,L,M
RA8601	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J	H,J,K,L,M
RA8602	NRZ0034-103W	NET RESISTOR	10kΩ 1/32W J	H,J,K,L,M
RA8605	NRZ0034-0R0W	NET RESISTOR	0Ω 1/32W J	H,J,K,L,M
RA8606	NRZ0034-0R0W	NET RESISTOR	0Ω 1/32W J	H,J,K,L,M
L1001	NQLC32M-100X	COIL	10uH M	
L1002	NQLC32M-100X	COIL	10uH M	
L1701	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	A,B,C,D,E,F,H
L1701	NQL382M-100X	COIL	10uH M	G,J,K,L,M
L1702	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	A,B,C,D,E,F,G,H
L1702	NQL382M-100X	COIL	10uH M	J,K,L,M
L2401	NQLC32M-100X	COIL	10uH M	
L2402	NQLC32M-100X	COIL	10uH M	
L2601	NQR0269-013X	FERRITE BEADS		
L2602	NQR0269-013X	FERRITE BEADS		
L2603	NQR0269-013X	FERRITE BEADS		
L2801	NQR0006-001X	FERRITE BEADS		H,J,K,L,M
L3001	NQLC32M-100X	COIL	10uH M	
L3002	NQR0006-001X	FERRITE BEADS		
L3003	NQR0006-001X	FERRITE BEADS		
L3004	NQLC32M-100X	COIL	10uH M	
L3005	NQR0006-001X	FERRITE BEADS		
L3007	NQR0006-001X	FERRITE BEADS		
L3008	NQLC32M-100X	COIL	10uH M	
L3009	NQR0006-001X	FERRITE BEADS		
L3010	NQL085J-120X	COIL	12uH J	
L3012	NQL085J-2R2X	COIL	2.2uH J	
L3201	NQR0129-002X	FERRITE BEADS		
L3202	NQR0129-002X	FERRITE BEADS		
L3203	NQR0006-001X	FERRITE BEADS		
L3204	NQLC32M-100X	COIL	10uH M	
L3501	NQR0006-001X	FERRITE BEADS		
L3502	NQLC32M-100X	COIL	10uH M	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

⚠ Symbol No.	Part No.	Part Name	Description	Local
L3503	NQR0006-001X	FERRITE BEADS		
L3504	NQR0006-001X	FERRITE BEADS		
L3505	NQR0006-001X	FERRITE BEADS		
L3701	NQLC32M-100X	COIL	10uH M	
L3731	NQL085J-6R8X	COIL	6.8uH J	G,J,K,L,M
L3732	NQL085J-6R8X	COIL	6.8uH J	G,J,K,L,M
L4201	NQR0129-002X	FERRITE BEADS		
L4202	NQLC32M-100X	COIL	10uH M	
L4901	NQR0129-002X	FERRITE BEADS		
L4902	NQL38DK-100X	P COIL	10uH K	
L4953	NQR0129-002X	FERRITE BEADS		
L4954	NQL38DK-100X	P COIL	10uH K	
L4955	NQL38DK-100X	P COIL	10uH K	
L5501	NQLC32M-100X	COIL	10uH M	
L5502	NQR0129-002X	FERRITE BEADS		
L5503	NQR0129-002X	FERRITE BEADS		
L5504	NQR0129-002X	FERRITE BEADS		
L5505	NQLC32M-100X	COIL	10uH M	
L5506	NQLC32M-100X	COIL	10uH M	
L5507	NQLC32M-100X	COIL	10uH M	
L5508	NQR0129-002X	FERRITE BEADS		
L6001	NQLZ012-4R7X	COIL	4.7uH	
L6002	NQLZ012-4R7X	COIL	4.7uH	
L6101	NQL87EN-390X	COIL	39uH N	
L6201	NQL87EN-390X	COIL	39uH N	
L6301	NQLZ012-470X	COIL	47uH	
L6401	NQLZ012-470X	COIL	47uH	
L6501	NQL52EM-221X	COIL	220uH M	
L6502	NQL38DK-100X	P COIL	10uH K	
L6701	NQL52EM-390X	COIL	39uH M	
L6702	NQL79GM-220X	COIL	22uH M	
L6801	NQL79GM-470X	COIL	47uH M	
L8001	NQR0129-002X	FERRITE BEADS		H,J,K,L,M
L8002	NQR0129-002X	FERRITE BEADS		H,J,K,L,M
L8003	NQR0129-002X	FERRITE BEADS		H,J,K,L,M
L8005	NQR0129-002X	FERRITE BEADS		H,J,K,L,M
L8006	NQR0006-001X	FERRITE BEADS		H,J,K,L,M
L8007	NQR0129-002X	FERRITE BEADS		H,J,K,L,M
L8101	NQR0006-001X	FERRITE BEADS		H,J,K,L,M
L8102	NQR0006-001X	FERRITE BEADS		H,J,K,L,M
L8601	NQR0129-002X	FERRITE BEADS		H,J,K,L,M
L8602	NQR0129-002X	FERRITE BEADS		H,J,K,L,M
L8603	NQR0006-001X	FERRITE BEADS		H,J,K,L,M
L8604	NQR0006-001X	FERRITE BEADS		H,J,K,L,M
L8606	NQLC32M-100X	COIL	10uH M	H,J,K,L,M
L8607	NQR0129-002X	FERRITE BEADS		H,J,K,L,M
L8610	NQR0536-001X	CHOKE COIL		H,J,K,L,M
CN101	QGF0549C2-20W	CONNECTOR	CCD FFC/FPC (1-20)	
CN102	QGF0549C1-22W	CONNECTOR	OP FFC/FPC (1-22)	
CN103	QGF0528F1-40X	CONNECTOR	REAR PWB FFC/FPC (1-40)	
CN104	QGF0530F3-30W	CONNECTOR	MDA PWB FFC/FPC (1-30)	
CN105	QGF0547C2-45X	CONNECTOR	MONI/OPE FFC/FPC (1-45)	
CN106	QGF0543F1-16X	CONNECTOR	SENSOR FFC/FPC (1-16)	
CN107	QGF0530F3-16W	CONNECTOR	FRONT FFC/FPC (1-16)	
CN108	QGF0530F3-14W	CONNECTOR	CAMERA OPE FFC/FPC (1-14)	
CN109	QGF0517F1-08X	CONNECTOR	HEAD FFC/FPC (1-8)	
CN112	QGA1001F1-02X	CONNECTOR	SPEAKER W-B (1-2)	
CN113	QGB0519J1-40X	CONNECTOR	JIG CN B-B (1-40)	
CN114	QGA1001F1-04X	CONNECTOR	INT MIC W-B (1-4)	
⚠ F6001	NMFZ007-2R5X-K	FUSE	2.5A 24V	
J101	QNZ0497-001	USB(B) CONNECTOR	USB(MINI-B)	H,J,K,L,M
J102	QNZ0732-001	D CONNECTOR	DV	
X1001	NAX0645-001X	CRYSTAL		
X1002	NAX0564-001X	CRYSTAL	32.768kHz	
X5501	NAX0587-001X	CXO	54.0000MHz	
X8601	NAX0713-001X	CRYSTAL		H,J,K,L,M
SD1	LY34802-001A	SHIELD CASE	PREREC	

CCD BOARD ASSEMBLY <02>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10037-01C	CCD BOARD ASSY		
Q5001	2SC3931/CD/-X	TRANSISTOR		
Q5002	2SC4081/QR/-X	TRANSISTOR		
C5001	NBP41EM-475X-B	TA E CAPACITOR	4.7uF 25V M	
C5002	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C5003	NBP21CM-106X	TA E CAPACITOR	10uF 16V M	
C5004	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C5005	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C5006	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C5007	NCB31HK-222X	C CAPACITOR	2200pF 50V K	
R5001	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
R5002	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J	
L5001	NQL315K-100X	COIL	10uH K	
L5002	NQL315K-100X	COIL	10uH K	

MDA BOARD ASSEMBLY <03>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10030-01C	MDA BOARD ASSY		
IC1601	BD6637KV	IC	MDA 64PIN	
Q1601	UMC3N-W	DIGI TRANSISTOR	LD ON	
Q1601 or	XP03311-W	DIGI TRANSISTOR	LD ON	
D1603	DAP222-X	DIODE ARRAY	LD ON	
D1603 or	MA132WA-X	SI DIODE		
C1601	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C1602	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C1603	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C1605	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C1606	NCBA1HK-152W	C CAPACITOR	1500pF 50V K	
C1607	NCBA1CK-473W	C CAPACITOR	0.047uF 16V K	
C1614	NBE91AM-475X	TA E CAPACITOR	4.7uF 10V M	
C1618	NCBA1HK-222W	C CAPACITOR	2200pF 50V K	
C1619	NCBA1HK-222W	C CAPACITOR	2200pF 50V K	
C1620	NCBA1HK-222W	C CAPACITOR	2200pF 50V K	
C1621	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C1622	NCBA1CK-223W	C CAPACITOR	0.022uF 16V K	
C1623	NCBA1AK-473W	C CAPACITOR	0.047uF 10V K	
C1624	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C1625	NDCA1HJ-101W	C CAPACITOR	100pF 50V J	
C1626	NCBA1EK-472W	C CAPACITOR	4700pF 25V K	
C1627	NCBA1EK-472W	C CAPACITOR	4700pF 25V K	
C1628	NCB31CK-224X	C CAPACITOR	0.22uF 16V K	
C1629	NCJ31EK-224X-A	C CAPACITOR	0.22uF 25V K	
C1630	NCJ31EK-224X-A	C CAPACITOR	0.22uF 25V K	
C1631	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C1632	NCB21CK-474X	C CAPACITOR	0.47uF 16V K	
C1633	NCB30JK-474X	C CAPACITOR	0.47uF 6.3V K	
R1601	NRSA6AJ-681W	MG RESISTOR	680Ω 1/16W J	
R1602	NRSA6AJ-124W	MG RESISTOR	120kΩ 1/16W J	
R1603	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R1604	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1610	NRSA6AJ-391W	MG RESISTOR	390Ω 1/16W J	
R1611	NRSA6AJ-391W	MG RESISTOR	390Ω 1/16W J	
R1612	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1613	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1614	NRZ0072-R330X	MG RESISTOR	0.33Ω 1/4W F	
R1616	NRSA6AD-392W	MG RESISTOR	3.9kΩ 1/16W D	
R1617	NRZ0072-R330X	MG RESISTOR	0.33Ω 1/4W F	
R1620	NRSA6AJ-683W	MG RESISTOR	68kΩ 1/16W J	
R1621	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1622	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1624	NRSA6AD-183W	MG RESISTOR	18kΩ 1/16W D	
R1625	NRSA6AD-681W	MG RESISTOR	680Ω 1/16W D	
R1629	NRSA6AJ-564W	MG RESISTOR	560kΩ 1/16W J	
R1635	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R1636	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R1637	NRSA6AJ-154W	MG RESISTOR	150kΩ 1/16W J	
L1601	NQL382M-100X	COIL	10uH M	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

⚠ Symbol No.	Part No.	Part Name	Description	Local
CN301	QGF0530F3-18W	CONNECTOR	CAPSTAN FFC/FPC (1-18)	
CN302	QGF0532F2-11X	CONNECTOR	DRUM MOTOR FFC/FPC (1-11)	
CN303	QGF0530F3-06W	CONNECTOR	R.ENCODER FFC/FPC (1-6)	
CN304	QGF0517F2-06X	CONNECTOR	LOAD.MOTOR FFC/FPC (1-6)	
CN305	QGF0530F3-30W	CONNECTOR	MAIN PWB FFC/FPC (1-30)	
⚠ F1601	NMFZ007-R20X-K	FUSE	0.2A 50V	
⚠ F1602	NMFZ007-R50X-K	FUSE	0.5A 50V	
OT1	LY44587-001B	SHEET(MDA)	MECHA	
OT2	LY30034-080A	SPACER(A)	IC1601	
OT3	LY30034-051A	SPACER(A)	CN301	
WR1	WJT0180-001A-E	E-CARD WIRE	MAIN PWB	

FRONT BOARD ASSEMBLY <04>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10031-02A	FRONT BOARD ASSY		A,B,C,D,E,F,G
PW1	LYA10031-01A	FRONT BOARD ASSY		H,J,K,L,M
IC401	RPM7138-SV4	IR DETECT UNIT	IR_SENSOR	
Q401	RPM-22PB	PHOTO TRANSISTOR	W/B	
Q402	BC847PN-X	PAIR TRANSISTOR		H,J,K,L,M
Q403	BC847PN-X	PAIR TRANSISTOR		H,J,K,L,M
Q404	2SC4617/RS/-X	TRANSISTOR		H,J,K,L,M
Q404 or	BC847BT-X	TRANSISTOR		H,J,K,L,M
Q404 or	2SD2216J/RS/-X	TRANSISTOR		H,J,K,L,M
D401	UDZS6.8B-X	Z DIODE	EXT MIC	
D402	EW5806X/3LMH/	LED		H,J,K,L,M
D403	EW5806X/3LMH/	LED		H,J,K,L,M
C401	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C402	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C405	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C406	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
R401	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R402	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
R403	NRSA63J-391X	MG RESISTOR	390Ω 1/16W J	H,J,K,L,M
R404	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	H,J,K,L,M
R405	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	H,J,K,L,M
R406	NRSA63J-270X	MG RESISTOR	27Ω 1/16W J	H,J,K,L,M
R407	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	H,J,K,L,M
R408	NRSA63J-270X	MG RESISTOR	27Ω 1/16W J	H,J,K,L,M
R409	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
R410	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J	H,J,K,L,M
L401	NQR0265-001X	FERRITE BEADS		
L402	NQR0269-013X	FERRITE BEADS		
L403	NQR0269-013X	FERRITE BEADS		
L404	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
CN401	QGF0530F3-16W	CONNECTOR	FFC/FPC (1-16)	
J401	QNS0147-001	3.5 JACK	EXT MIC	
S401	NSW0150-001X	PUSH SWITCH	EJECT SW	
OT1	LY30034-0T6A	SPACER(A)		H,J,K,L,M

REAR BOARD ASSEMBLY <05>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10032-02B	REAR BOARD ASSY		A,B,C,D,E,F,G
PW1	LYA10032-01B	REAR BOARD ASSY		H,J,K,L,M
D501	EMZ6.8N-X	Z DIODE	BATT	
D502	UDZS6.8B-X	Z DIODE	ADP_L	
D502 or	MA8068-X	Z DIODE	ADP_L	
D503	UDZS6.8B-X	Z DIODE	P_DET	
D503 or	MA8068-X	Z DIODE	P_DET	
C501	NCB31CK-103X	C CAPACITOR	0.01uF 16V K	
C502	NCB31CK-103X	C CAPACITOR	0.01uF 16V K	
C506	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C901	NCB31CK-103X	C CAPACITOR	0.01uF 16V K	H,J,K,L,M
C902	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	H,J,K,L,M
R501	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R502	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R901	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
R902	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
R903	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
R904	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
R905	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
R906	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	H,J,K,L,M
R907	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	H,J,K,L,M
L501	NQR0251-004X	FERRITE BEADS		
L502	NQR0251-004X	FERRITE BEADS		
L503	NQR0251-004X	FERRITE BEADS		
L901	NQR0006-001X	FERRITE BEADS		H,J,K,L,M
CN501	QGF0528F1-40X	CONNECTOR	MAIN PWB FFC/FPC (1-40)	
CN901	NNZ0104-001X	SD CARD CONNE	SD	H,J,K,L,M
J501	QNA0039-001	DC JACK	DC JACK	
J502	QNS0147-003	3.5 JACK	AV OUT	
OT1	LY34726-001A	BATT. TERMINAL		
WR1	QUQ105-4006AA-E	FFC WIRE	FPC 40pin 6cm	

MONI OPE BOARD ASSEMBLY <06>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10033-02A	MONI OPE BOARD ASSY		A,B,C,D,E,F,G
PW1	LYA10033-01A	MONI OPE BOARD ASSY		H,J,K,L,M
IC7801	AN2540FHQ	IC		
Q7801	PUMX1-W	PAIR TRANSISTOR		
Q7801 or	BC847S-X	PAIR TRANSISTOR		
Q7801 or	UMX1N-W	PAIR TRANSISTOR		
Q7802	EMX1-W	TRANSISTOR		
Q7803	EMX1-W	TRANSISTOR		
Q7804	EMX1-W	TRANSISTOR		
Q7805	PUMX1-W	PAIR TRANSISTOR		
Q7805 or	BC847S-X	PAIR TRANSISTOR		
Q7805 or	UMX1N-W	PAIR TRANSISTOR		
Q7806	XP4311-W	TRANSISTOR		
Q7806 or	UMD3N-W	DIGI TRANSISTOR		
D601	MA8068-X	Z DIODE	S_DET	
D601 or	UDZS6.8B-X	Z DIODE		
C7801	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C7802	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C7803	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C7804	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C7805	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C7806	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C7807	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C7812	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C7813	NCB21AK-225X	C CAPACITOR	2.2uF 10V K	
C7814	NCB21AK-225X	C CAPACITOR	2.2uF 10V K	
C7815	NCB21AK-225X	C CAPACITOR	2.2uF 10V K	
C7816	NCB30JK-225X	C CAPACITOR	2.2uF 6.3V K	
C7817	NCBA1HK-152W	C CAPACITOR	1500pF 50V K	
C7819	NCB11CK-475X	C CAPACITOR	4.7uF 16V K	
C7824	NCB11CK-475X	C CAPACITOR	4.7uF 16V K	
C7825	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C7826	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C7827	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C7828	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C7831	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C7832	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C7833	NCB11CK-475X	C CAPACITOR	4.7uF 16V K	
C7834	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C7835	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C7836	NCB20JK-475X	C CAPACITOR	4.7uF 6.3V K	
C7837	NCB21CK-105X	C CAPACITOR	1uF 16V K	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

⚠ Symbol No.	Part No.	Part Name	Description	Local
C7838	NCB20JK-475X	C CAPACITOR	4.7uF 6.3V K	
C7839	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C7840	NCB20JK-475X	C CAPACITOR	4.7uF 6.3V K	
C7841	NCB21CK-105X	C CAPACITOR	1uF 16V K	
R601	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	H,J,K,L,M
R602	NRSA6AJ-682W	MG RESISTOR	6.8kΩ 1/16W J	H,J,K,L,M
R604	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R605	NRSA6AJ-682W	MG RESISTOR	6.8kΩ 1/16W J	
R606	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R7803	NRSA6AD-622W	MG RESISTOR	6.2kΩ 1/16W D	
R7804	NRSA6AD-153W	MG RESISTOR	15kΩ 1/16W D	
R7805	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R7806	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R7811	NRSA6AD-122W	MG RESISTOR	1.2kΩ 1/16W D	
R7812	NRSA6AD-823W	MG RESISTOR	82kΩ 1/16W D	
R7815	NRSA6AD-472W	MG RESISTOR	4.7kΩ 1/16W D	
R7816	NRSA6AD-203W	MG RESISTOR	20kΩ 1/16W D	
R7818	NRSA6AD-223W	MG RESISTOR	22kΩ 1/16W D	
R7819	NRSA6AD-822W	MG RESISTOR	8.2kΩ 1/16W D	
R7820	NRSA6AD-123W	MG RESISTOR	12kΩ 1/16W D	
R7821	NRSA6AD-222W	MG RESISTOR	2.2kΩ 1/16W D	
R7822	NRSA6AD-222W	MG RESISTOR	2.2kΩ 1/16W D	
R7823	NRSA6AJ-682W	MG RESISTOR	6.8kΩ 1/16W J	
R7824	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R7825	NRSA6AD-123W	MG RESISTOR	12kΩ 1/16W D	
R7826	NRSA6AD-222W	MG RESISTOR	2.2kΩ 1/16W D	
R7827	NRSA6AD-222W	MG RESISTOR	2.2kΩ 1/16W D	
R7828	NRSA6AJ-682W	MG RESISTOR	6.8kΩ 1/16W J	
R7829	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R7830	NRSA6AD-123W	MG RESISTOR	12kΩ 1/16W D	
R7831	NRSA6AD-222W	MG RESISTOR	2.2kΩ 1/16W D	
R7832	NRSA6AD-222W	MG RESISTOR	2.2kΩ 1/16W D	
R7833	NRSA6AJ-682W	MG RESISTOR	6.8kΩ 1/16W J	
R7834	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R7835	NRSA6AD-103W	MG RESISTOR	10kΩ 1/16W D	
R7836	NRSA6AD-103W	MG RESISTOR	10kΩ 1/16W D	
R7837	NRSA6AD-103W	MG RESISTOR	10kΩ 1/16W D	
R7838	NRSA6AD-103W	MG RESISTOR	10kΩ 1/16W D	
R7839	NRSA6AD-103W	MG RESISTOR	10kΩ 1/16W D	
R7840	NRSA6AD-103W	MG RESISTOR	10kΩ 1/16W D	
R7845	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
L601	NQR0251-004X	FERRITE BEADS		
L602	NQR0251-004X	FERRITE BEADS		
L7801	NQL38DK-220X	P COIL	22uH K	
L7802	NQL38DK-220X	P COIL	22uH K	
L7803	NQL38DK-220X	P COIL	22uH K	
L7804	NQL38DK-220X	P COIL	22uH K	
L7805	NQL38DK-220X	P COIL	22uH K	
⚠ BT601	QAB0069-001	LITHIUM BATTERY		
CN601	QGF0528F1-45X	CONNECTOR	MAIN PWB FFC/FPC (1-45)	
CN602	QGF0503F4-24X	CONNECTOR	MONI FPC FFC/FPC (1-24)	
CN603	QGF0549C1-16W	CONNECTOR	VF FPC FFC/FPC (1-16)	
J601	QND0078-001	S JACK	S JACK	
S601	NSW0099-001X	SLIDE SWITCH	VIDEO/DSC	H,J,K,L,M
S602	NSW0161-001X	DETECT SWITCH	MONITOR	
S603	NSW0198-001X	TACT SWITCH		H,J,K,L,M
S604	NSW0198-001X	TACT SWITCH		H,J,K,L,M
S605	NSW0198-001X	TACT SWITCH		H,J,K,L,M
S606	NSW0198-001X	TACT SWITCH		
S607	NSW0198-001X	TACT SWITCH		
S608	NSW0198-001X	TACT SWITCH		
S609	NSW0198-001X	TACT SWITCH		
S610	NSW0198-001X	TACT SWITCH		
S611	NSW0198-001X	TACT SWITCH		
WR1	WJT0182-001A-E	E-CARD WIRE		

MONI BL BOARD ASSEMBLY <07>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10034-01B	MONI BL BOARD ASSY		
IC7701	DN8797MS-X	IC		
Q7701	DTC144EE-X	DIGI TRANSISTOR		
Q7701 or	BCR148T-X	DIGI TRANSISTOR		
Q7701 or	UN9213J-X	DIGI TRANSISTOR		
Q7701 or	PDTC144EE-X	DIGI TRANSISTOR		
Q7702	DTA144EE-X	DIGI TRANSISTOR		
Q7702 or	BCR198T-X	DIGI TRANSISTOR		
Q7702 or	UN9113J-X	DIGI TRANSISTOR		
Q7702 or	PDTA144EE-X	DIGI TRANSISTOR		
Q7703	2SD1664/QR/-W	TRANSISTOR		
Q7703 or	STD1664/OY/-W	TRANSISTOR		
Q7704	2SD1664/QR/-W	TRANSISTOR		
Q7704 or	STD1664/OY/-W	TRANSISTOR		
C7701	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C7702	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C7703	NCZ1058-273X	C CAPACITOR	0.027uF	
C7704	NCZ1016-150X	C CAPACITOR	15pF 2kV J	
C7705	NCZ1016-180X	C CAPACITOR	18pF 2kV J	
C7751	NCB31HK-473X	C CAPACITOR	0.047uF 50V K	
C7752	NCBA1HK-471W	C CAPACITOR	470pF 50V K	
C7753	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C7754	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C7755	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C7756	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C7757	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C7758	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C7759	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C7760	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C7761	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C7762	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C7763	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C7764	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C7765	NBE20JM-476X	TA E CAPACITOR	47uF 6.3V M	
C7766	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C7767	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C7768	NBP21CM-106X	TA E CAPACITOR	10uF 16V M	
C7769	NCB31CK-105X	C CAPACITOR	1uF 16V K	
R7701	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R7702	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R7703	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R7752	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R7753	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R7754	NRSA6AJ-124W	MG RESISTOR	120kΩ 1/16W J	
R7755	NRSA6AJ-683W	MG RESISTOR	68kΩ 1/16W J	
R7756	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R7757	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R7758	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R7759	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
L7701	NQLB8EM-220X	COIL	22uH M	
L7702	NQLB8EM-680X	COIL	68uH M	
L7751	NQL382M-100X	COIL	10uH M	
L7752	NQL382M-100X	COIL	10uH M	
T7701	NQS0062-001X	SW TARNSF		
CN701	QGF0530F3-12W	CONNECTOR	MAIN FFC/FPC (1-12)	
CN702	QGF0530F3-12W	CONNECTOR	MAIN FFC/FPC (1-12)	
CN703	QGF0528F1-40X	CONNECTOR	LCD FFC/FPC (1-40)	
⚠ F7701	NMFZ007-R40X-K	FUSE	0.4A 50V	
SD1	LY44966-001A	SHIELD(TRANS)		
WR1	QAL0687-001	FPC	FPC	

VF BOARD ASSEMBLY <08>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10035-01B	VF BOARD ASSY		
Q7101	2SC4617/QR/-X	TRANSISTOR		
Q7101 or	2SC4738/YG/-X	TRANSISTOR		
Q7101 or	2SD2216J/QR/-X	TRANSISTOR		
Q7101 or	BC847BT-X	TRANSISTOR		
D7101	E1S35AW0C501-X	LED		

MODEL	MARK	MODEL	MARK	MODEL	MARK
GR-DF420EK	A	GR-DF425EK	E	GR-DF470EK	J
GR-DF420EX	B	GR-DF425EG	F	GR-DF470EX	K
GR-DF420EY	C	GR-DF430EK	G	GR-DF470EY	L
GR-DF420EZ	D	GR-DF460EK	H	GR-DF470EZ	M

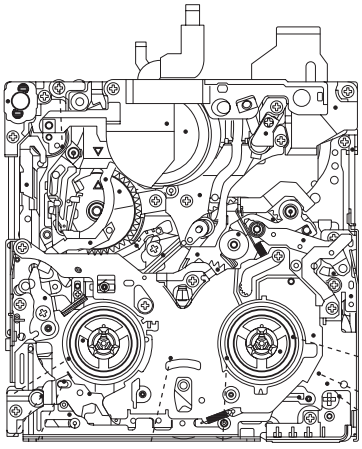
⚠ Symbol No.	Part No.	Part Name	Description	Local
C7101	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C7102	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C7103	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
C7104	NDC31HJ-101X	C CAPACITOR	100pF 50V J	
R7101	NRSA63D-682X	MG RESISTOR	6.8kΩ 1/16W D	
R7102	NRSA63D-272X	MG RESISTOR	2.7kΩ 1/16W D	
R7103	NRSA63D-820X	MG RESISTOR	82Ω 1/16W D	
R7104	NRSA63D-273X	MG RESISTOR	27kΩ 1/16W D	
R7105	NRSA63D-563X	MG RESISTOR	56kΩ 1/16W D	
R7106	NRSA63D-163X	MG RESISTOR	16kΩ 1/16W D	
R7107	NRSA63D-472X	MG RESISTOR	4.7kΩ 1/16W D	
R7108	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R7109	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
CN7101	QGF0530F3-14W	CONNECTOR	MAIN FFC/FPC (1-14)	
CN7102	QGF0530F3-15W	CONNECTOR	LCD FFC/FPC (1-15)	

JVC

SERVICE MANUAL

MECHANISM ASSEMBLY

DVC MECHANISM
VHS-C MECHANISM
VHS MECHANISM



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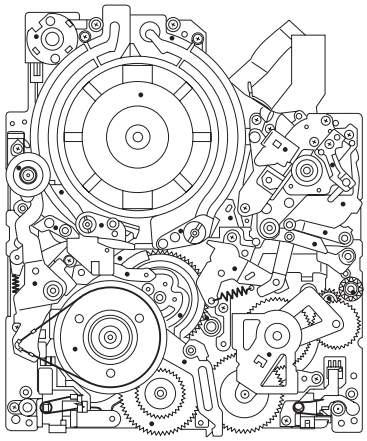

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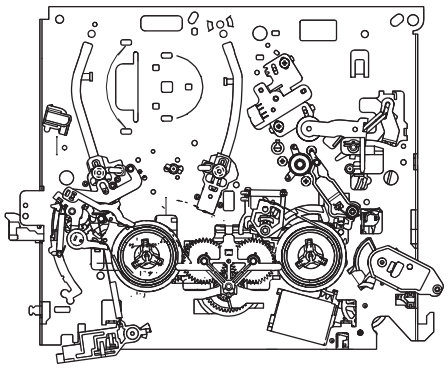

<VHS MECHANISM>

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2 SPECIFIC SERVICE INSTRUCTIONS 2-1
3 PARTS LIST 3-1

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No.86700
2003/04

SECTION 1
JIGS AND TOOLS

1.1 TOOLS REQUIRED FOR ADJUSTMENTS

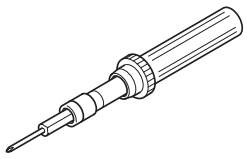
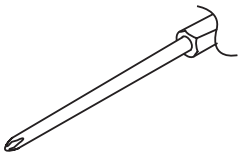
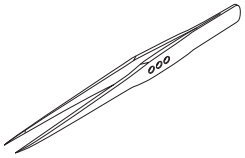
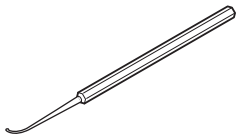
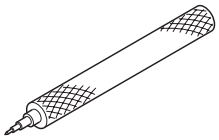
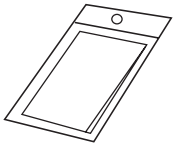
1. Torque driver YTU94088	2. Bit YTU94088-003
	
3. Tweezers P-895	4. Chip IC replacement jig PTS40844-2
	
5. Slit washer installation jig YTU94121A	6. Cleaning cloth KSMM-01
	

Fig.1-1-1

1. Torque driver
Be sure to use to fastening the mechanism and exterior parts because those parts must strictly be controlled for tightening torque.
Torque setting value of torque driver is limited. At the values over the maximum torque setting value, fasten a screw manually not to damage the screw thread.

2. Bit
This bit is slightly longer than those set in conventional torque drivers.

3. Tweezers
To be used for removing and installing parts and wires.

4. Chip IC replacement jig
To be used for replacement of part.

5. Slit washer installation jig
To be used to install slit washers.

6. Cleaning cloth
Recommended cleaning cloth to wipe down the video heads, mechanism (tape transport system), optical lens surface.

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

2.1 DVC MECHANISM

2.1.1 Precautions

(1) When fastening parts, pay careful attention to the tightening torque of each screw. Unless otherwise specified, tighten a screw with the torque of 0.055 N•m (0.56 kgf•cm).
(2) Be sure to disconnect the set from the power supply before fastening and soldering parts.
(3) When disconnecting/connecting wires, be careful not to get them and their connectors damaged.
(4) When replacing parts, be very careful neither to damage other parts nor to fit wrong parts by mistake.

2.1.2 Notes on procedure for disassembly/assembly

The disassembling procedure table (Fig. 2-1-10 on page 2-4,a part of the table is shown below for reference)shows the procedure to disassemble/reassemble mechanism parts.
Carefully read the following explanation before starting actual disassembling/reassembling work. The item numbers(circled numbers)in the following explanation correspond to those appearing under respective columns of the table.

Example

NO.	PART NAME		FIG.	POINT	NOTE	REMARKS
[1]	CASSETTE HOUSING ASSY	T	Fig.2-4-3	3(S1),(L1a)-(L1e)	**NOTE 1 a,b,c,d**	ADJUSTMENT
[2]	UPPER BASE ASSY	T	Fig.2-4-4	(S2),(L2a),(L2b)	**NOTE 2**	
[3]	DRUM ASSY	T		(S3a),2(S3b)	**NOTE 3 a,b**	
[4]	REEL DISK ASSY(SUP)	T	Fig.2-4-5	(W4)	**NOTE 4 a**	
[5]	REEL DISK ASSY(TU)	T		(W5a),(W5b),(W5c)	**NOTE 5 a,b**	
[6]	REEL COVER ASSY	T		(W6),(S6a),2(S6b)	**NOTE 6**	ADJUSTMENT

*1 *2 *3 *4 *5 *6 *7

*1 Numbers appearing in this column indicate the order to remove parts. When reassembling, follow these numbers in the reverse order. Circled numbers in this column correspond to those appearing in drawings of this section.
*2 This column shows part names corresponding to numbers in the left column.
*3 The symbol (T or B)appearing in this column shows the side which the objective part is mounted on.
T =the upper side, B =the lower side
*4 Symbols appearing in this column indicate drawing numbers.
*5 This column indicates parts and points such as screws, washers,springs,and others to be removed/fitted for disassembling/reassembling the mechanism. Besides such the parts, this column occasionally indicates working points.

P = Spring
W = Washer
S = Screw
* = Lock (L),soldering (SD),shield,connector (CN),etc.

Example

- Remove (W1)=Washer W1.
- Remove the solder at (SD1)=Point SD1.
- Disconnect A = Connector A.

*6 Numbers in this column represent the numbers of notes in the text.
(For parts that need phase adjustment after reassembling, refer to “MECHANISM ADJUSTMENTS”.)
*7 This column indicates required after-disassembling/-reassembling work such as phase adjustment or mechanism adjustment.

2.1.3 DISASSEMBLY AND ASSEMBLY OF MECHANISM ASSEMBLY

2.1.3.1 General statement

The mechanism should generally be disassembled/assembled in the C.IN mode (ASSEMBLY mode). (Refer to Fig. 2-1-1,2-1-2.) However, when the mechanism is removed from the main body, it is set in the STOP mode. Therefore, after the mechanism is removed from the main body, supply 3 V DC to the electrode on the top of the loading motor to enter the mechanism mode into the C IN mode compulsory.

<Mechanism assembly/Cassette housing assembly>

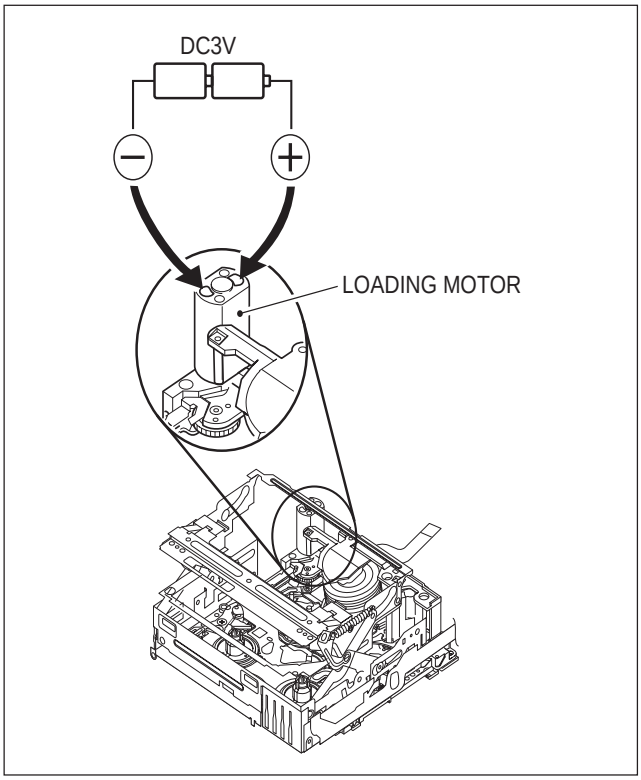


Fig.2-1-1

<Back side of the mechanism assembly>

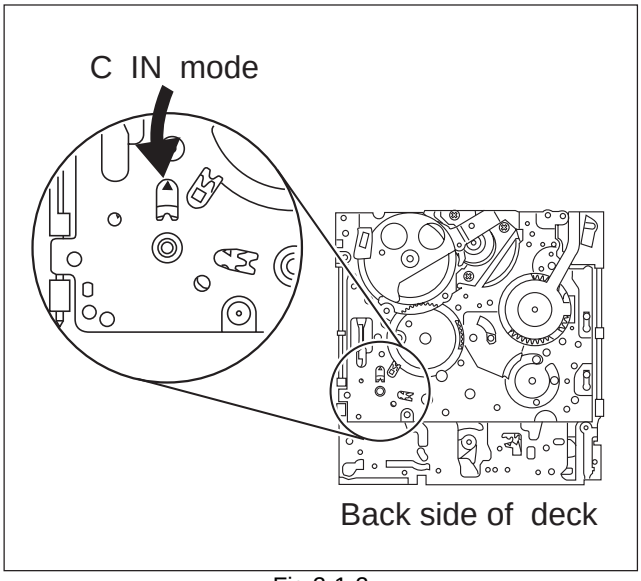


Fig.2-1-2

2.1.3.2 Explanation of mechanism mode

The mechanism mode of this model is classified into five modes as shown in Fig. 2-1-9. Each mechanism mode can be distinguished from others by the relative position of "△", "○", "⬭", "□" marks on the sub cam gear to the inner or outer protrusion on the main deck.

Refer to Fig. 2-1-3 to 2-1-8 below.

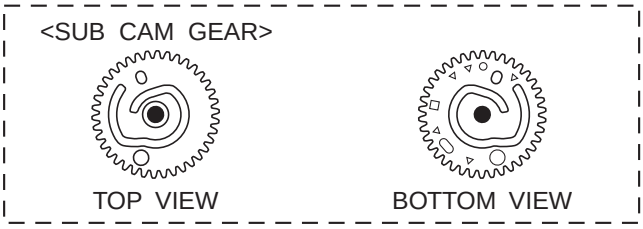


Fig.2-1-3

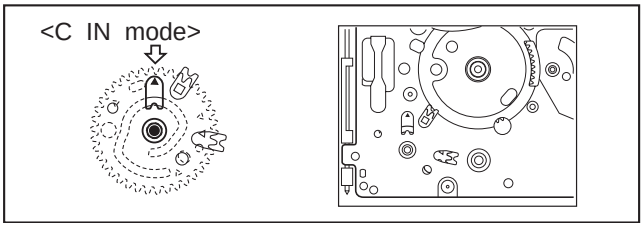


Fig.2-1-4

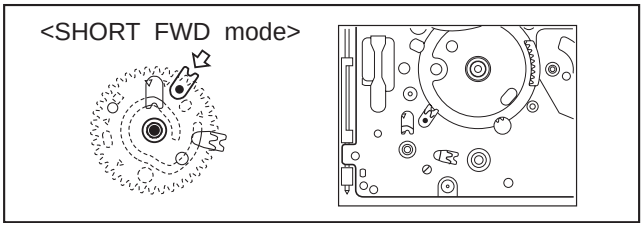


Fig.2-1-5

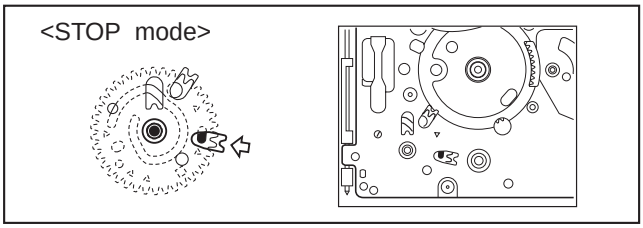


Fig.2-1-6

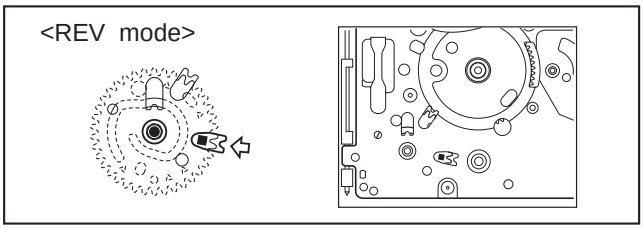


Fig.2-1-7

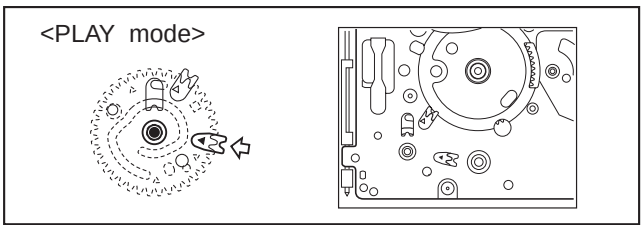


Fig.2-1-8

2.1.3.3 Mechanism timing chart

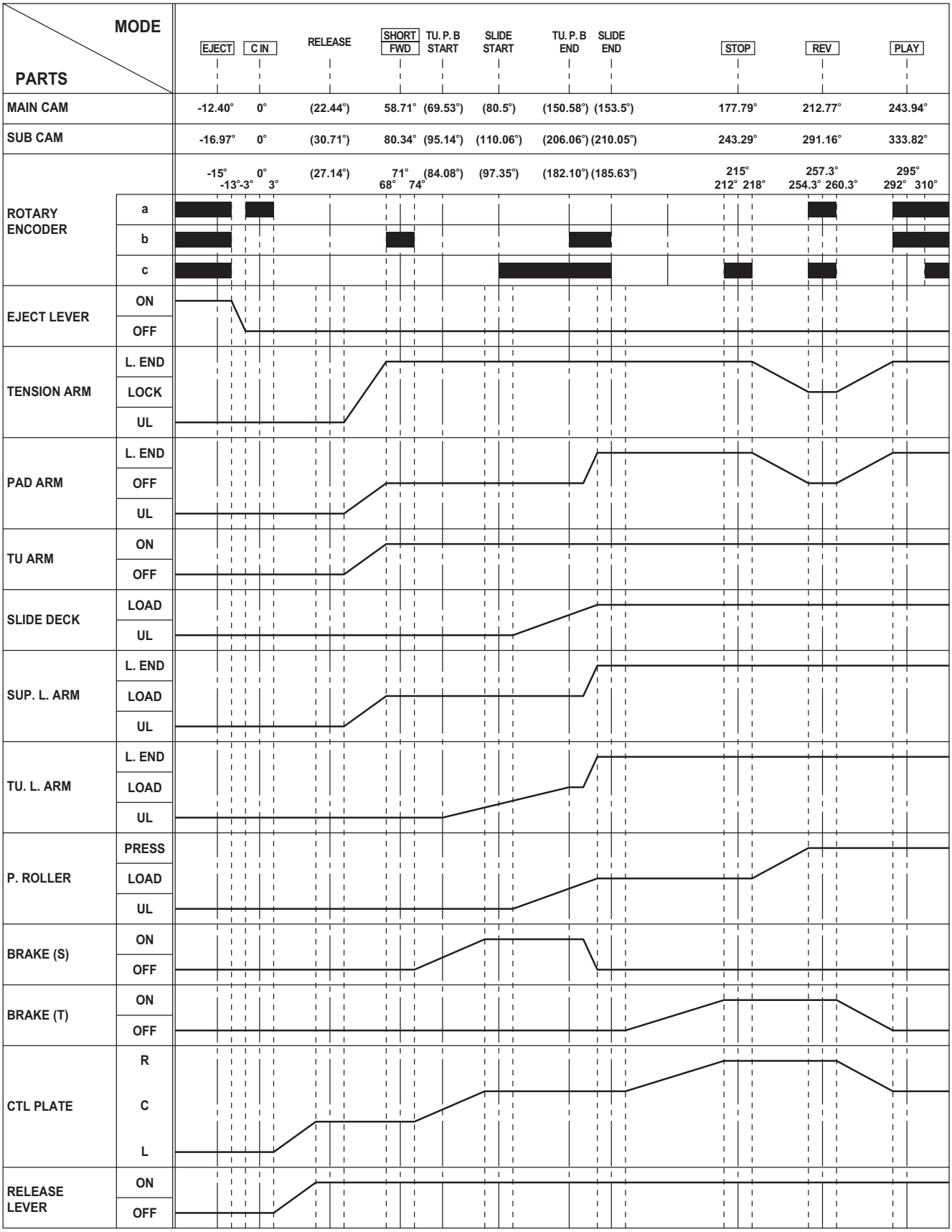


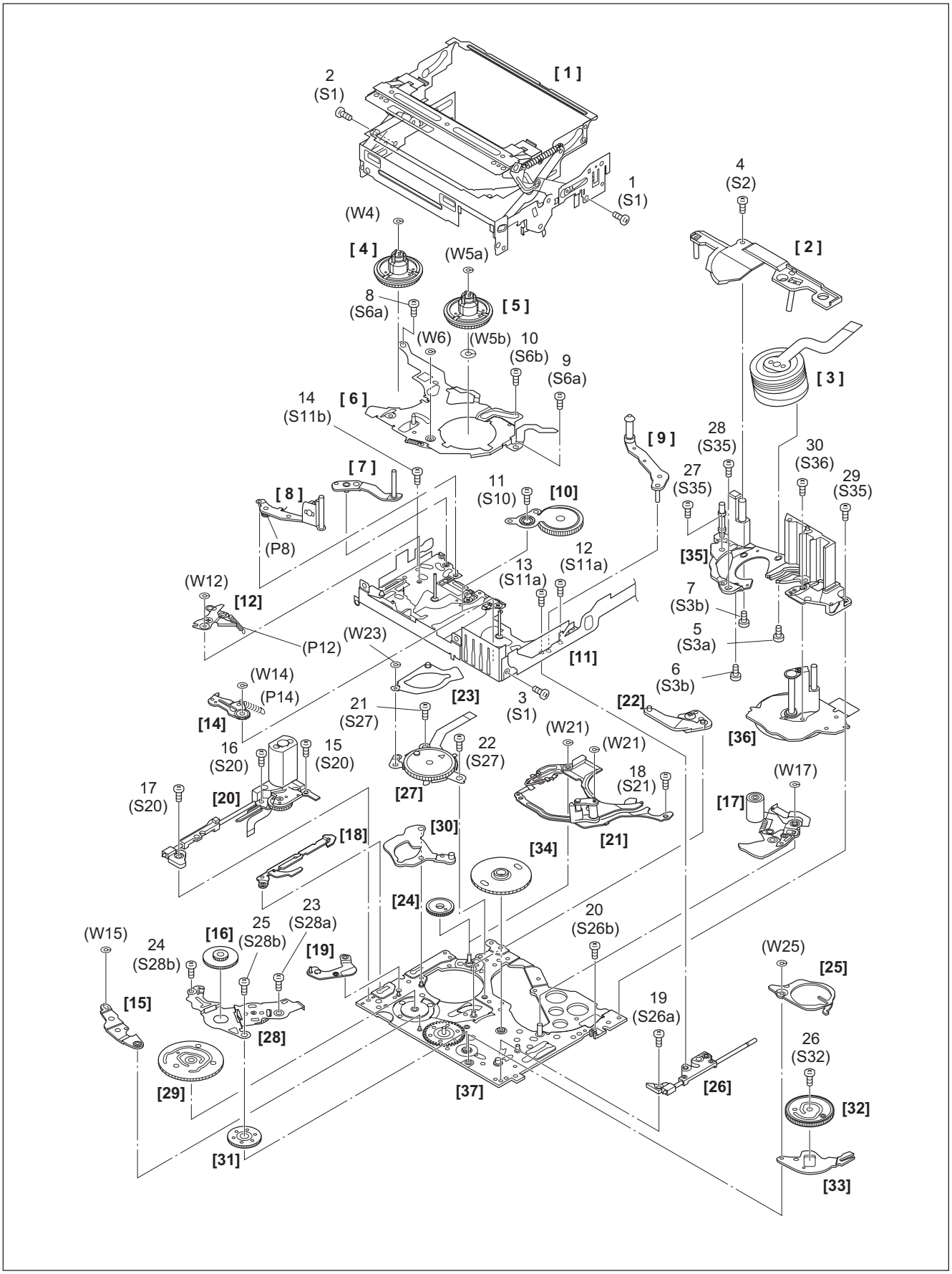
Fig.2-1-9

2.1.4 DISASSEMBLY PROCEDURE TABLE

MARK: # After assembly, perform adjustments.

NO.	PART NAME		FIG.	POINT	NOTE	REMARKS
[1]	CASSETTE HOUSING ASSY	T	Fig.2-1-14	3(S1),(L1a)-(L1e)	**NOTE 1 a,b,c,d**	ADJUSTMENT
[2]	UPPER BASE ASSY	T	Fig.2-1-15	(S2),(L2a),(L2b)	**NOTE 2**	
[3]	DRUM ASSY	T		(S3a),2(S3b)	**NOTE 3 a,b**	ADJUSTMENT
[4]	REEL DISK ASSY(SUP)	T	Fig.2-1-16	(W4)	**NOTE 4**	
[5]	REEL DISK ASSY(TU)	T		(W5a),(W5b)	**NOTE 5 a,b**	
[6]	REEL COVER ASSY	T		(W6),2(S6a),(S6b)	**NOTE 6**	
[7]	TENSION ARM ASSY	T	Fig.2-1-17	(L7)	**NOTE 7**	ADJUSTMENT / #
[8]	SLANT POLE ARM ASSY	T		(P8)	**NOTE 8**	ADJUSTMENT
[9]	TU ARM ASSY	T		(L9)	**NOTE 9**	ADJUSTMENT
[10]	SWING ARM ASSY	T		(S10)	**NOTE 10**	ADJUSTMENT
[11]	SLIDE DECK ASSY	T	Fig.2-1-18	2(S11a),(S11b),2(L11a), 2(L11b),(L11c)	**NOTE 11a,b**	ADJUSTMENT / #
[12]	PAD ARM ASSY	T	Fig.2-1-19	(P12),(L12),(W12)	**NOTE 12**	ADJUSTMENT / #
[13]	-	-		-	-	
[14]	TU BRAKE ASSY	T		(P14),(L14),(W14)	**NOTE 14**	ADJUSTMENT
[15]	TENSION CTL LEVER ASSY	T	Fig.2-1-20	(W15)	**NOTE 15**	ADJUSTMENT
[16]	CENTER GEAR	T		-	**NOTE 16**	
[17]	PINCH ROLLER ARM F. ASSY	T		(W17)	**NOTE 17**	ADJUSTMENT
[18]	TENSION CTL PLATE ASSY	T		-	**NOTE 18**	ADJUSTMENT
[19]	BRAKE CTL LEVER ASSY	T		-	**NOTE 19**	ADJUSTMENT
[20]	MOTOR BRACKET ASSY	T	Fig.2-1-21	3(S20),(L20a),2(L20b)	**NOTE 20**	ADJUSTMENT
[21]	GUIDE RAIL ASSY	T		2(W21),(S21),2(L21a),(L21b)	**NOTE 21**	ADJUSTMENT
[22]	SLIDE LEVER 2 ASSY	T		-	**NOTE 22**	ADJUSTMENT / #
[23]	LOADING PLATE ASSY	T		(W23)	**NOTE 23**	ADJUSTMENT
[24]	MODE GEAR	T		-	**NOTE 24**	
[25]	EJECT LEVER	T		(W25)	**NOTE 25**	ADJUSTMENT
[26]	BASE R ASSY	T	Fig.2-1-22	(S26a),(S26b),2(L26)	**NOTE 26**	ADJUSTMENT
[27]	ROTARY ENCODER	T		2(S27)	**NOTE 27**	PHASE ADJUSTMENT
[28]	GEAR COVER ASSY	T		(S28a),2(S28b)	-	
[29]	MAIN CAM ASSY	T		-	**NOTE 29**	PHASE ADJUSTMENT
[30]	SLIDE ARM ASSY	T	Fig.2-1-23	-	**NOTE 30**	ADJUSTMENT
[31]	CONNECT GEAR 2	T		-	**NOTE 31**	
[32]	SUB CAM ASSY	T		(S32)	**NOTE 32**	PHASE ADJUSTMENT
[33]	CONTROL ARM ASSY	T		-	**NOTE 33**	ADJUSTMENT
[34]	REEL GEAR 1	T		-	**NOTE 34**	
[35] / [36]	DRUM BASE ASSY/ CAPSTAN MOTOR	T	Fig.2-1-24	3(S35)	**NOTE 35a,b**	ADJUSTMENT
[36]	CAPSTAN MOTOR	T		(S36)	**NOTE 36**	ADJUSTMENT
[37]	MAIN DECK ASSY	T		-	-	

Fig.2-1-10


2
(S1)
[1]
1
(S1)
4
(S2)
(W4)
[4]
(W5a)
[2]
8
(S6a)
[5]
(W6)
(W5b)
10
(S6b)
9
(S6a)
[3]
14
(S11b)
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[9]
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7
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(P14)
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(S32)
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[33]

Fig.2-1-11

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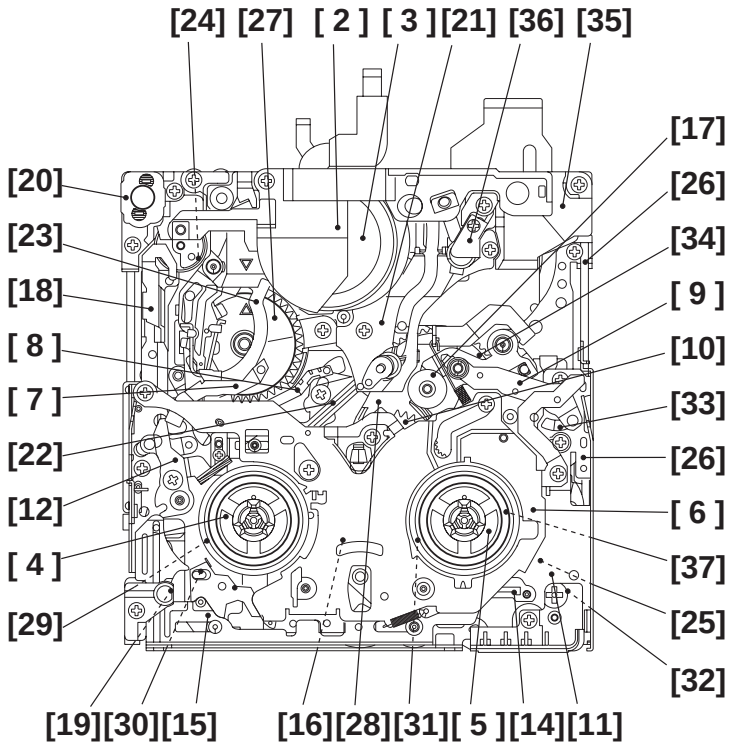


Fig.2-1-12

< BOTTOM VIEW >

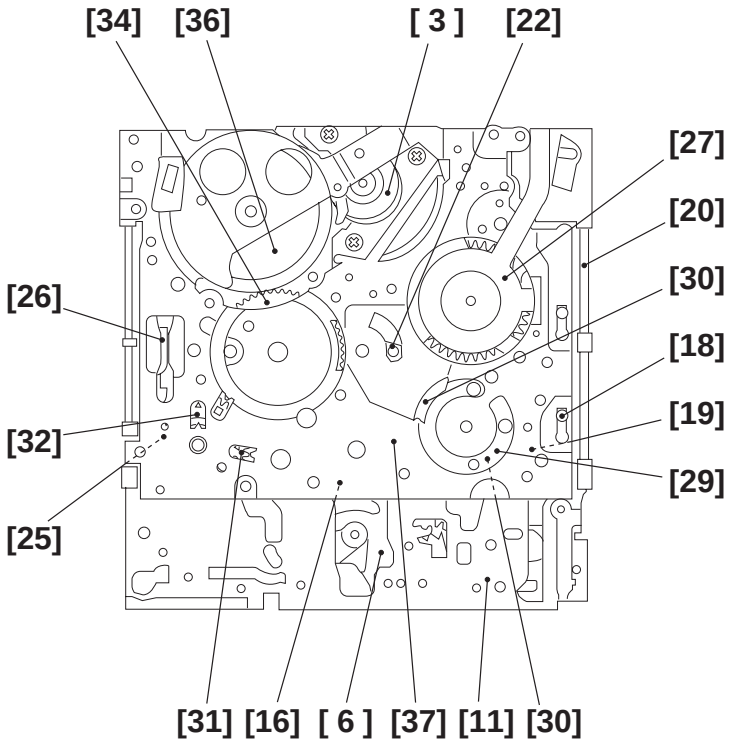


Fig.2-1-13

2.1.5 DISASSEMBLY/ASSEMBLY

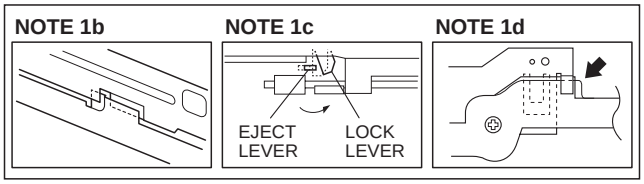
2.1.5.1 [1] CASSETTE HOUSING ASSY

NOTE 1a:
Be careful not to damage any of the parts during work.

NOTE 1b:
Special care is required in mounting.

NOTE 1c:
When mounting, the CASSETTE HOUSING ASSY should be attached in the Eject status. Pay heed to the positions of the LOCK LEVER and EJECT LEVER during mounting.

NOTE 1d:
When mounting, be sure to locate the FPC in the gap.



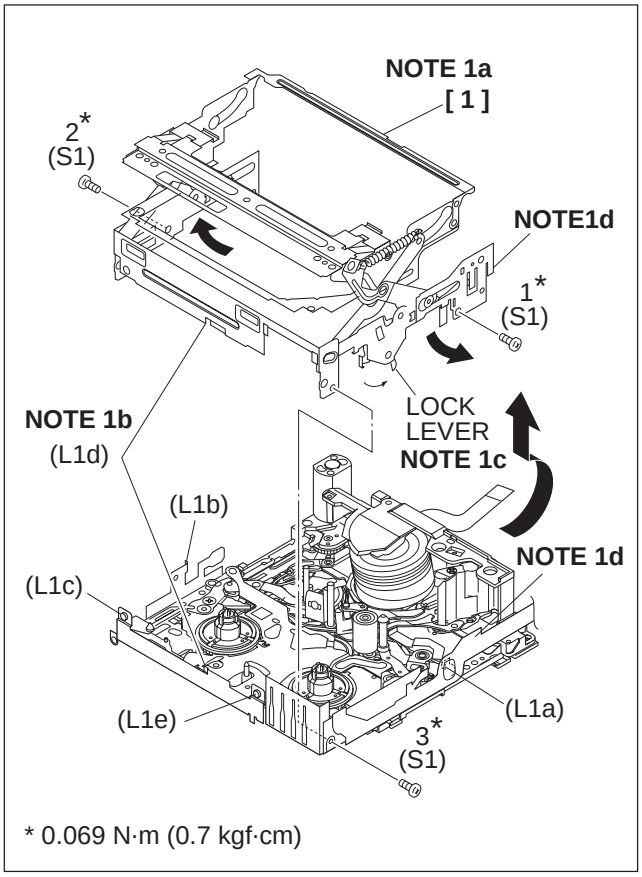


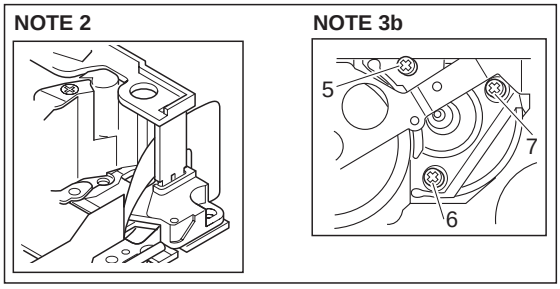
Fig.2-1-14

2.1.5.2 [2] UPPER BASE ASSY
[3] DRUM ASSY

NOTE 2:
When mounting, be sure to insert the FPC reinforcing sheet.

NOTE 3a:
Be mindful of scratches or damage during work.

NOTE 3b:
Be careful not to attach screws incorrectly.



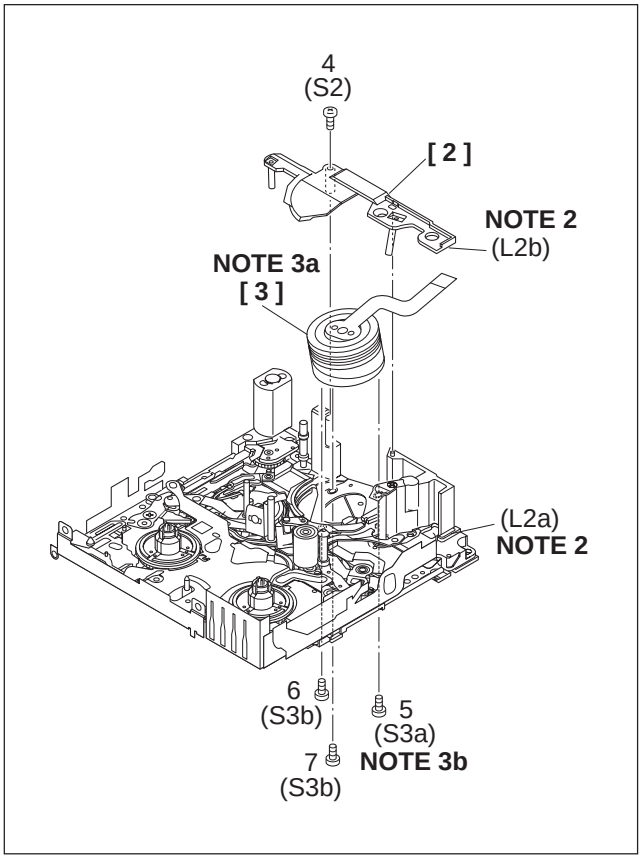


Fig.2-1-15

2.1.5.3 [4] REEL DISK ASSY(SUP)
[5] REEL DISK ASSY(TU)
[6] REEL COVER ASSY

NOTE 4:

Be careful not to attach the REEL DISK wrongly. The Supply side can be identified by the white color at the center.

NOTE 5a:

Be careful not to attach the REEL DISK wrongly. The Take-up side can be identified by the black color at the center.

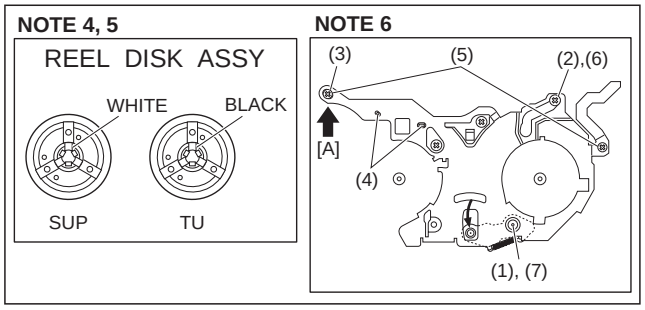
NOTE 5b

The washer is inserted under the REEL DISK.
Be carefull not to lose the washer.
Two washers are inserted under the REEL DISK in some products manufactured earlier, but one washer is inserted in the products manufactured recently and in the future.
See the parts list, and use the parts written in the parts list.

NOTE 6:

Perform the following steps for mounting.

(1) Align the hole with the pin.
(2) Attach the **[17]** PINCH ROLLER ARM FINAL ASSY by aligning the positions.
(3) Attach the SLIDE DECK ASSY (POINT[A]) by aligning the positions.
(4) Check that the parts below them are located in the correct positions.
(5) Tighten the 2 screws.
(6) Tighten the screw.
(7) Attach the 1 SLIT WASHER parts.



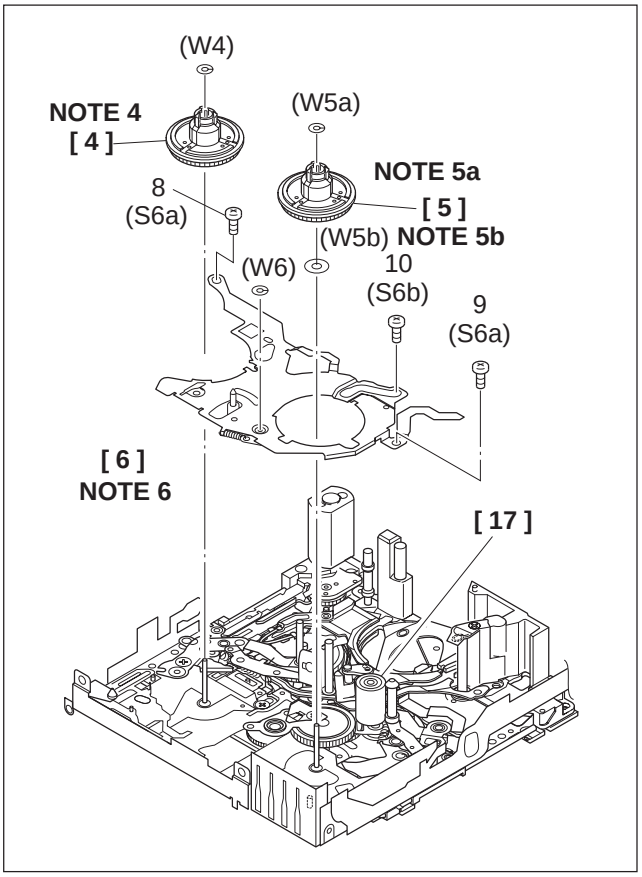


Fig.2-1-16

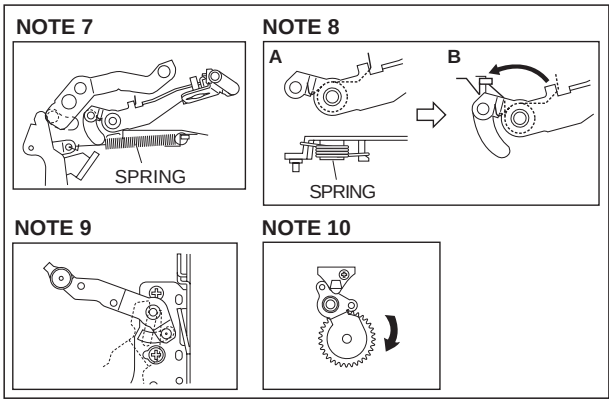
2.1.5.4 [7] TENSION ARM ASSY
[8] SLANT POLE ARM ASSY
[9] TU ARM ASSY
[10] SWING ARM ASSY

NOTE 7:
When detaching, remove the spring of the **[12]** PAD ARM ASSY in advance.
Pay attention to the attachment position.

NOTE 8:
When mounting the SLANT POLE ARM ASSY, hook the spring onto the lug as in diagram A, and fit the combination onto the SLIDE DECK ASSY. After fitting, hook the spring onto the lug of the SLIDE DECK ASSY as in diagram B.
Be careful not to lose the spring.

NOTE 9:
Pay attention to the attachment position.

NOTE 10:
When detaching, remove the screw then remove the SWING ARM ASSY by pulling it up and turning it.



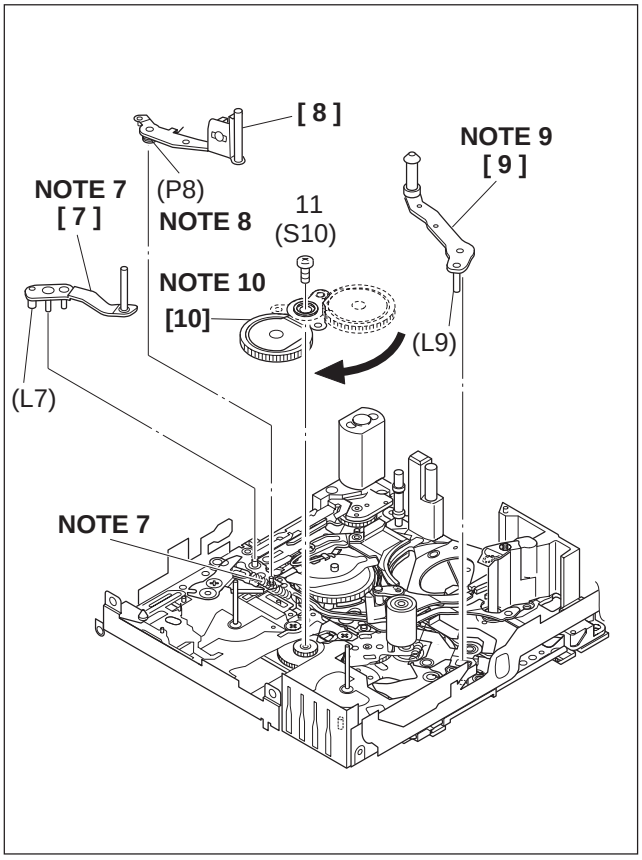


Fig.2-1-17

2.1.5.5 [11] SLIDE DECK ASSY

NOTE 11a:

Each of the parts on the SLIDE DECK ASSY can be replaced separately.

When detaching the assembly, if there is no need to replace any of its parts, remove the SLIDE DECK ASSY as it is.

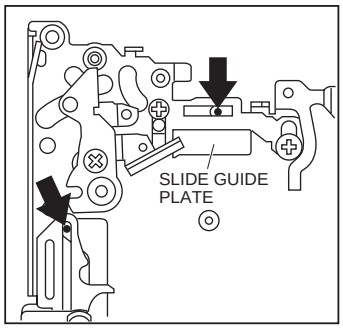
NOTE 11b:

When mounting, pay attention to the positions of the **[22]** SLIDE LEVER 2 ASSY studs and the **[19]** BRAKE CTL LEVER ASSY.

When mounting, position the CONTROL PLATE on the left side.

Pay attention to the position of the SLIDE GUIDE PLATE during mounting.

NOTE 11b



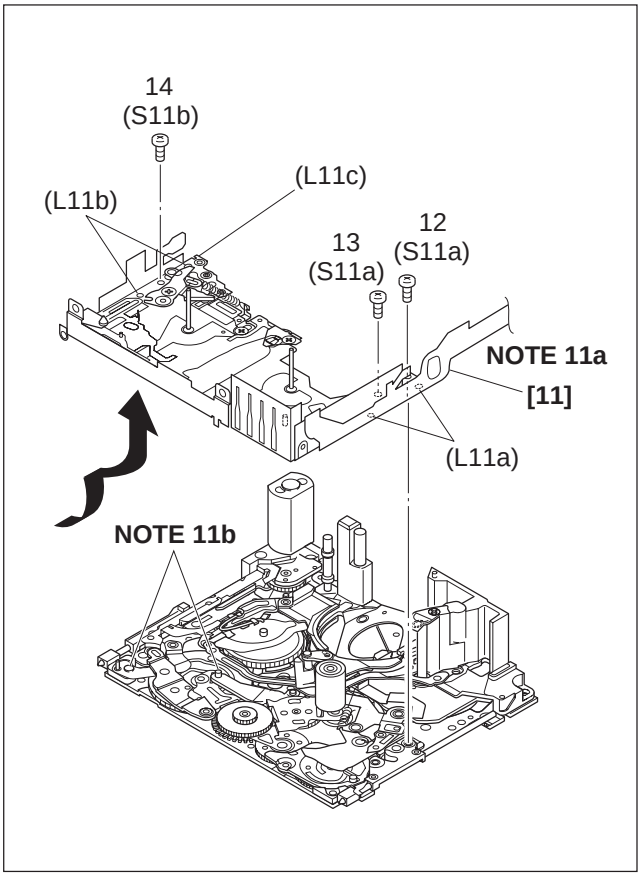


Fig.2-1-18

2.1.5.6 [12] PAD ARM ASSY
[13] -
[14] TU BRAKE ASSY

NOTE 12:

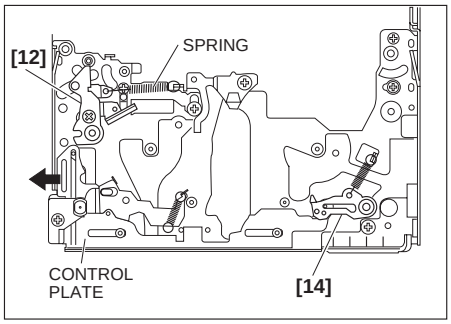
The spring may have already been disengaged when the **[8]** SLANT POLE ARM ASSY was removed.

NOTES 14:

When mounting, pay attention to the correct positioning.

Mount the CONTROL PLATE by moving it fully toward the left side.

NOTE 12,14



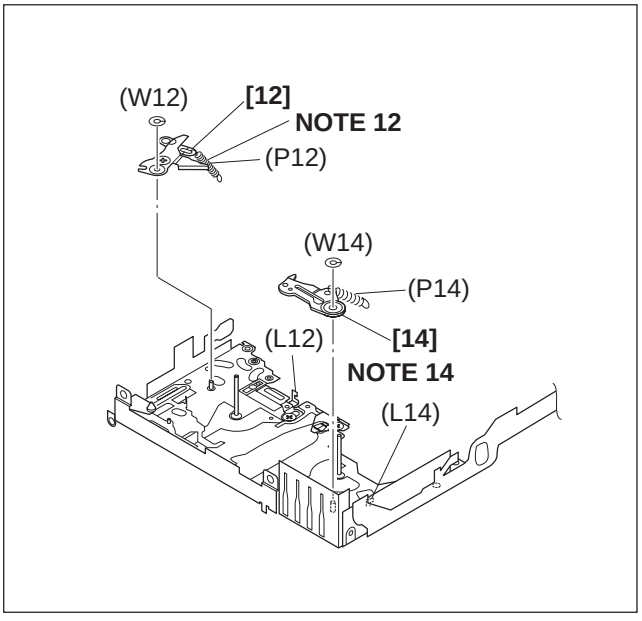


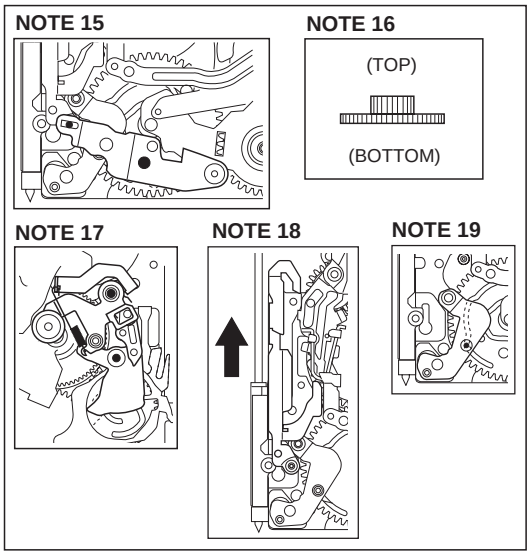
Fig.2-1-19

2.1.5.7 [15] TENSION CTL LEVER ASSY
[16] CENTER GEAR
[17] PINCH ROLLER ARM FINAL ASSY
[18] TENSION CTL PLATE ASSY
[19] BRAKE CTL LEVER ASSY

NOTES 15/16:
When mounting, pay attention to the correct positioning.

NOTE 17:
Take care against grease attachment during work.

NOTES 18/19:
When mounting, pay attention to the correct positioning.



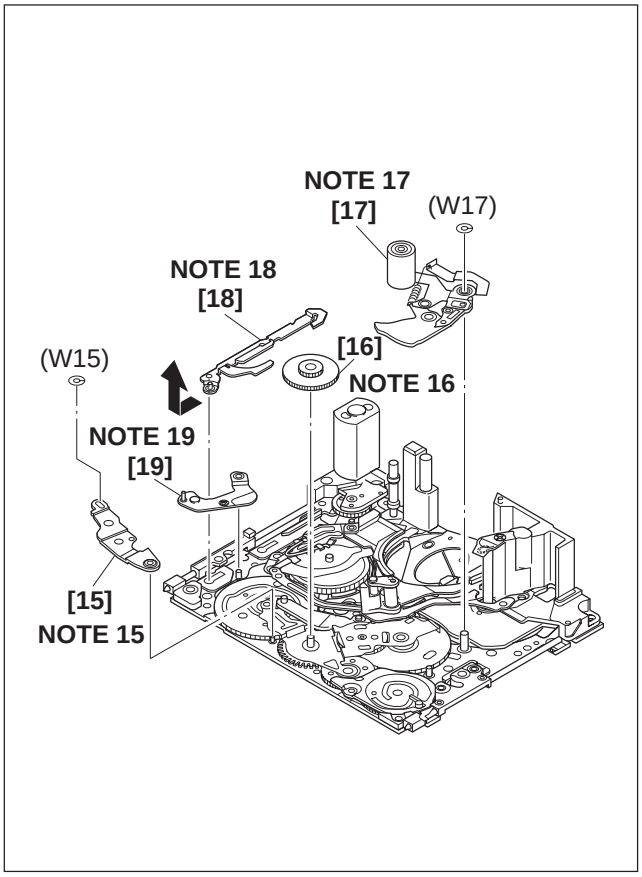


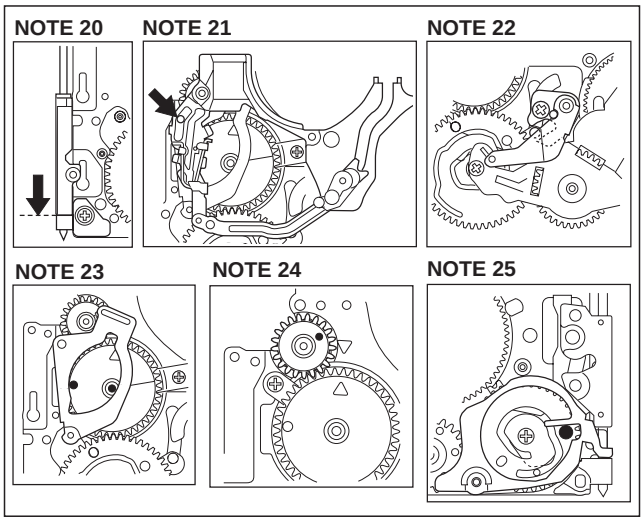
Fig.2-1-20

2.1.5.8 [20] MOTOR BRACKET ASSY
[21] GUIDE RAIL ASSY
[22] SLIDE LEVER 2 ASSY
[23] LOADING PLATE ASSY
[24] MODE GEAR
[25] EJECT LEVER

NOTE 20:
When mounting, pay attention to the positioning of the sliding parts.

NOTE 21:
When mounting, take care that no part is allowed to float or rattle.

NOTES 22/23/24/25:
When mounting, pay attention to the correct positioning.



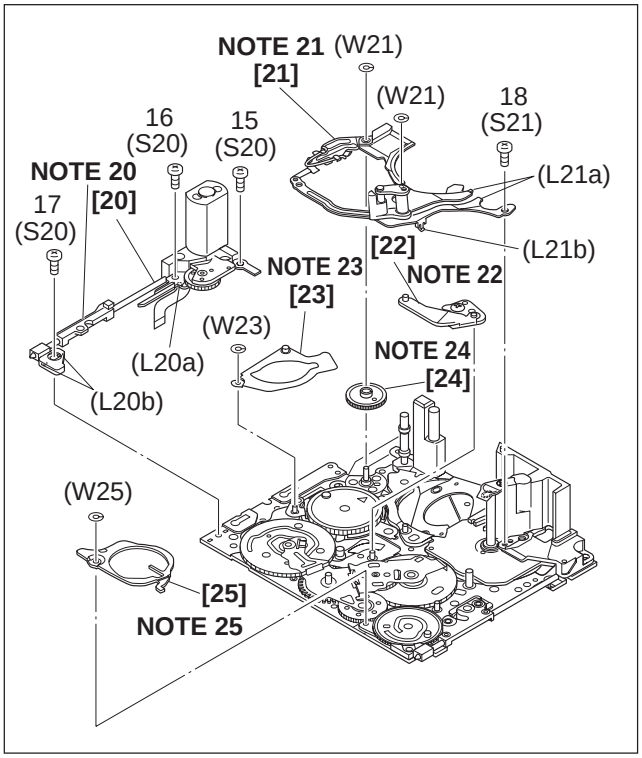


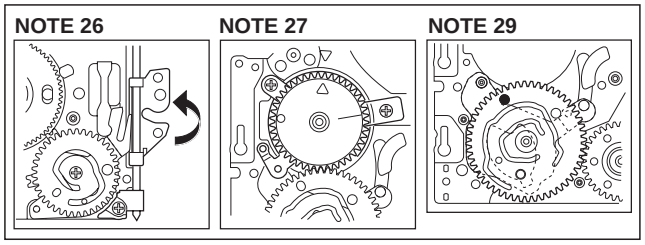
Fig.2-1-21

2.1.5.9 [26] BASE R ASSY
[27] ROTARY ENCODER
[28] GEAR COVER ASSY
[29] MAIN CAM ASSY

NOTE 26:
When mounting, fold the sliding part to the inner side.

NOTE 27:
When mounting, pay attention to the correct positioning and the FPC layout.

NOTE 29:
When mounting, pay attention to the correct positioning.



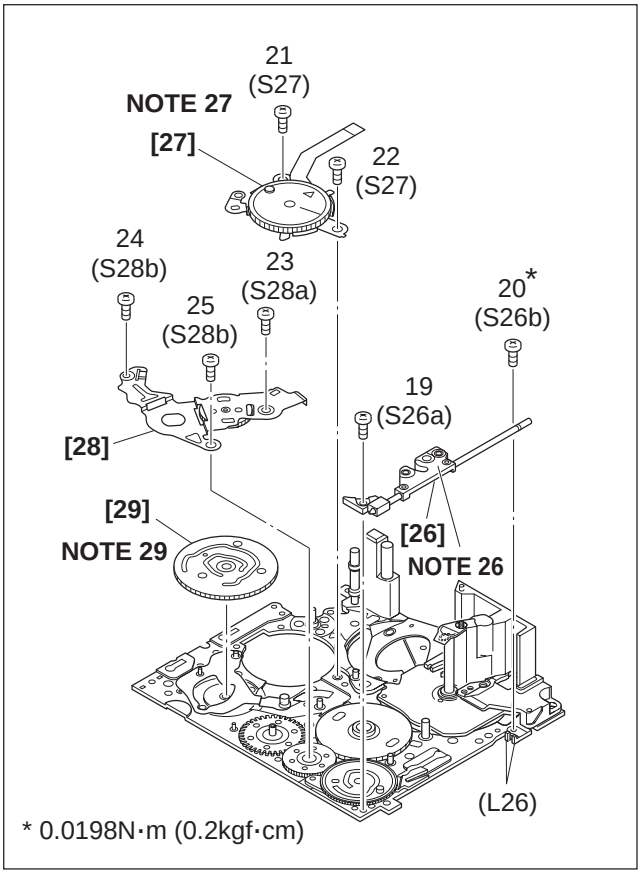


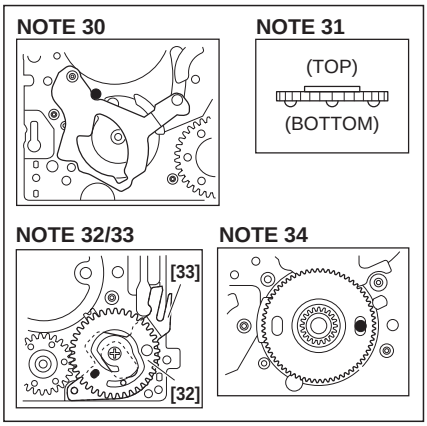
Fig.2-1-22

2.1.5.10 [30] SLIDE ARM ASSY
[31] CONNECT GEAR 2
[32] SUB CAM ASSY
[33] CONTROL ARM ASSY
[34] REEL GEAR 1

NOTE 30:
When mounting, pay attention to the correct positioning.

NOTE 31:
When mounting, pay attention to the position of the front and back.

NOTES 32/33/34:
When mounting, pay attention to the correct positioning.



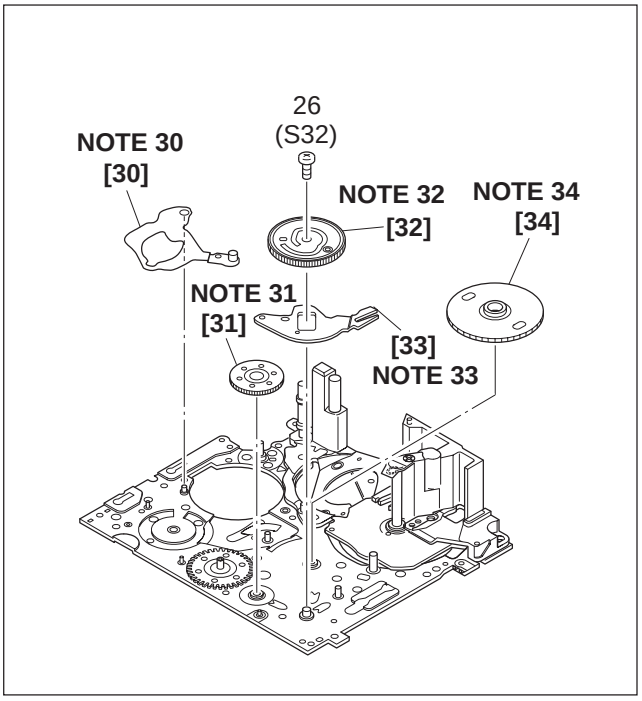


Fig.2-1-23

2.1.5.11 [35] DRUM BASE ASSY
[36] CAPSTAN MOTOR
[37] MAIN DECK ASSY

NOTES 35a/36:

Since [36]CAPSTAN MOTOR is attached to [35]DRUM BASE ASSY, remove [36]CAPSTAN MOTOR together with [35]DRUM BASE ASSY when removing [36]CAPSTAN MOTOR.

[36]CAPSTAN MOTOR should not be separated from [35]DRUM BASE ASSY except when replacing them.

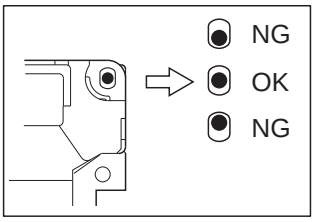
NOTE 35b:

It is very important to attach [35]DRUM BASE ASSY to the proper position.

Especially, improper engagement of [36]CAPSTAN MOTOR with [34]REEL GEAR 1 causes operational defection or abnormal sound. Therefore, confirm the attachment position before disassembly procedure.

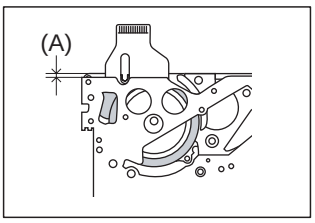
See the following figure as for the proper attachment position.

NOTE 35b



When [35]DRUM BASE ASSY is properly attached, the screw hole tends to be located at the center of the oval.

When the screw hole is located far from the center of the oval, operational defection or abnormal sound may occur.



Before removing [35]DRUM BASE ASSY, confirm the position of [35]DRUM BASE ASSY by seeing the length (A), as shown in the left figure.

When reattaching [35]DRUM BASE ASSY, confirm the position to reattach [35]DRUM BASE ASSY by seeing the length (A). Be sure to reattach [35]DRUM BASE ASSY to the same position as it has been before the removing procedure.

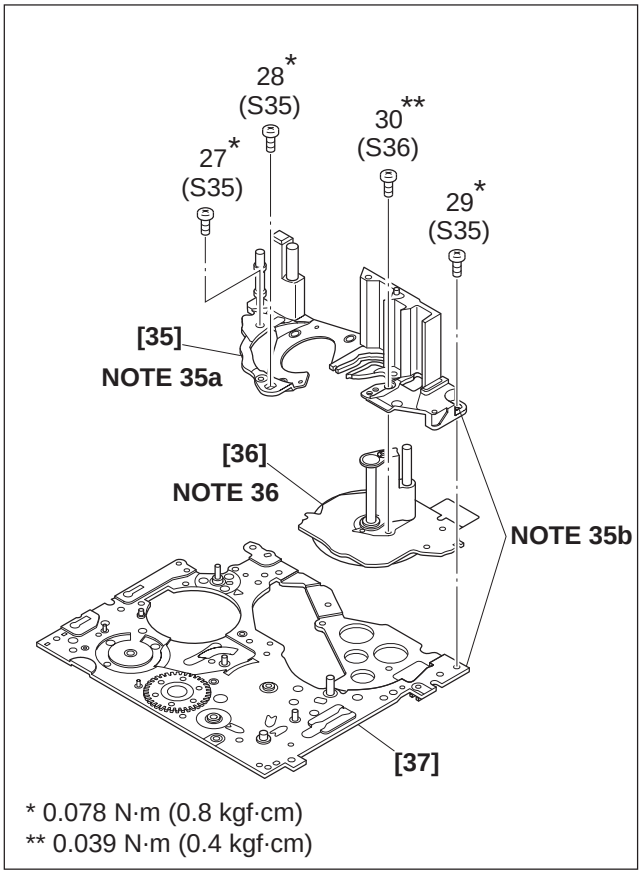


Fig.2-1-24

2.1.6 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

[24]MODE GEAR

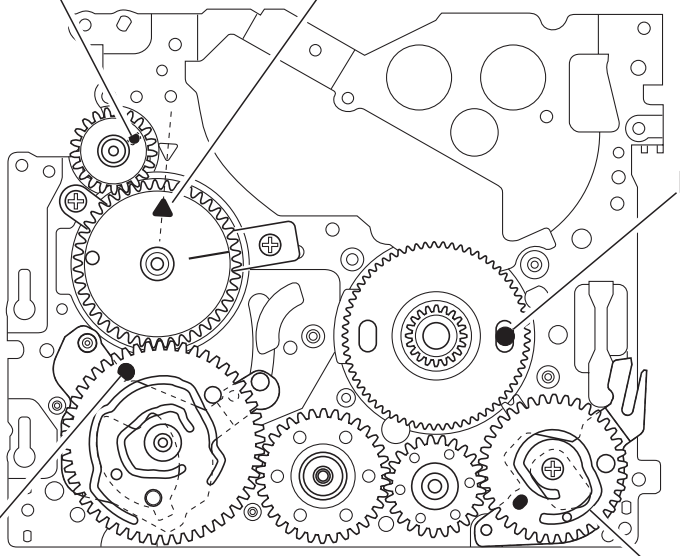
Align the MODE GEAR with the Main Deck Assembly hole.

Note:
The MODE GEAR may be displaced during the mechanism operation, however it can be checked from the rear and realigned during manual assembly.

[27]ROTARY ENCODER

Mount the ROTARY ENCODER by aligning its mark (△) and the mark (▽) of the Main Deck Assembly.

Note:
Be careful when handling the FPC during mounting.



[34]REEL GEAR 1

Align the REEL GEAR 1 with the Main Deck Assembly hole.

Note:
The REEL GEAR 1 may be displaced during mechanism operation, however this can be checked from the rear and realigned during manual assembly.

[29]MAIN CAM ASSY/[30]SLIDE ARM ASSY

When mounting the SLIDE ARM ASSY align it with the Main Deck Assembly and MAIN CAM ASSY holes.

Note:
During the mounting procedure, make sure that the[32] SUB CAM ASSY is in the correct mounting position.

[32]SUB CAM ASSY/[33] CONTROL ARM ASSY

Mount the SUB CAM ASSY hole to align with the CONTROL ARM ASSY and Main Deck Assembly holes and then tighten them all together with a screw.

Note:
When mounting it, make sure that the[29]MAIN CAM ASSY is in the correct mounting position.

Fig.2-1-25

2.1.7 MECHANISM ADJUSTMENTS

2.1.7.1 Adjustment of the slide guide plate

Use Fig. 2-1-26 as the reference unless otherwise specified.

(1) Set the PLAY mode. See Fig. 2-1-8.
(2) Loosen the screws (**A**, **B**).
(3) With the Main Deck and Slide Deck Assemblies pushed into the unit, tighten the screws (**A**, **B**) while applying pressure to the stud (shaft) on the Slide Guide plate.
The pressure applied should be enough to enable utilization of the rebounding force of the springs.
The tightening torque should be 0.069 N•m (0.7 kgf•cm).
(4) Check the operation.
Repeat unloading and loading several times and make sure that these operations can be performed smoothly without producing rattles.

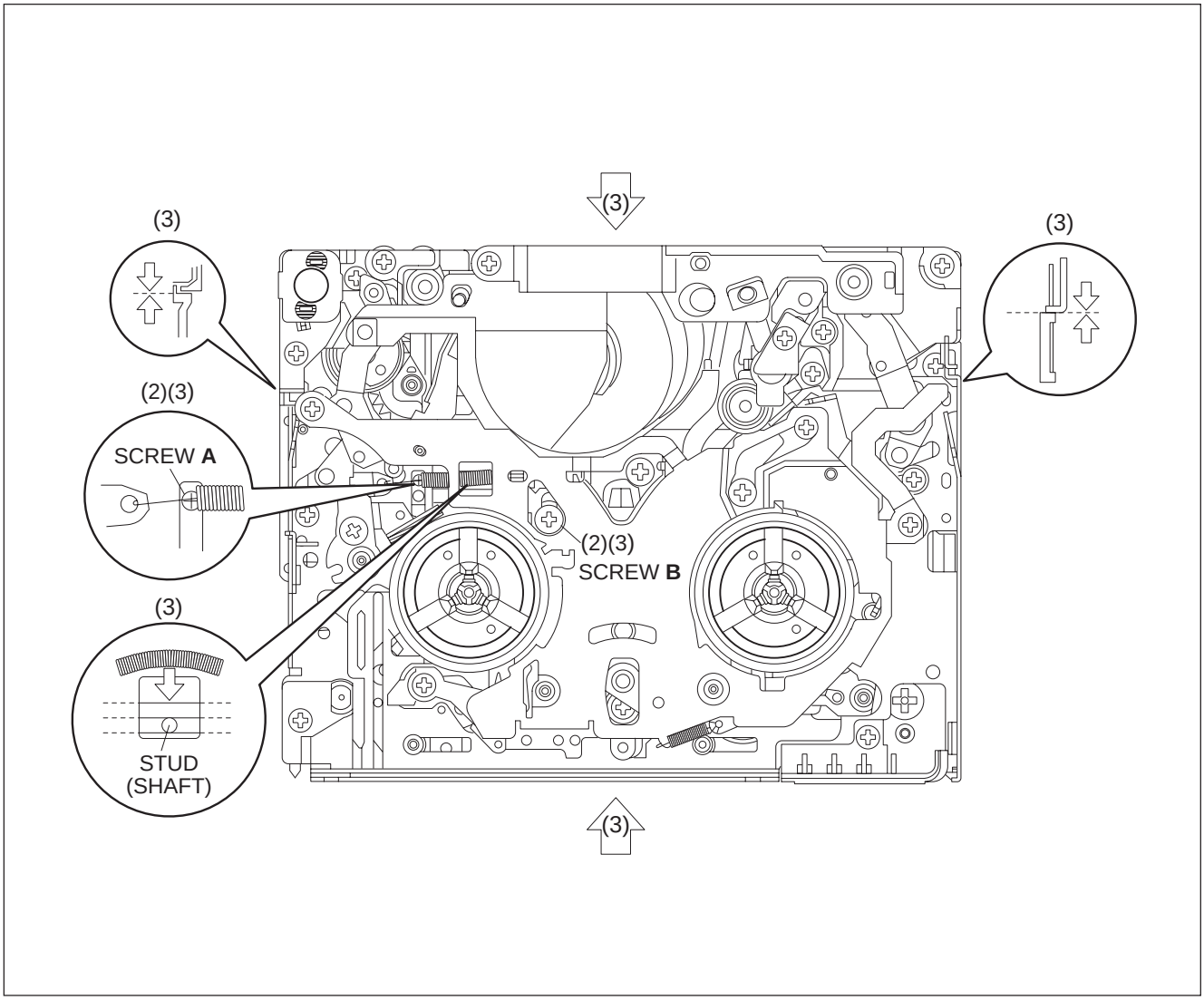


Fig.2-1-26

2.1.7.2 Adjustment of the Tension Arm and Pad Arm Assemblies

Use Fig. 2-1-27 as the reference unless otherwise specified.

(1) Set the PLAY mode.
See Fig. 2-1-8.
(2) Loosen the screw **A**.
(3) With the take-up side at the bottom, align the extreme end of the Tension Arm Assembly with the crossed grooves on the screw **B** that retains the Loading Motor Assembly and then tighten the screw **A**.
The tightening torque should be 0.069 N•m (0.7 kgf•cm).
(4) Check the operation.
Repeat unloading and loading several times and make sure that the Tension Arm Assembly is located within the normal range.

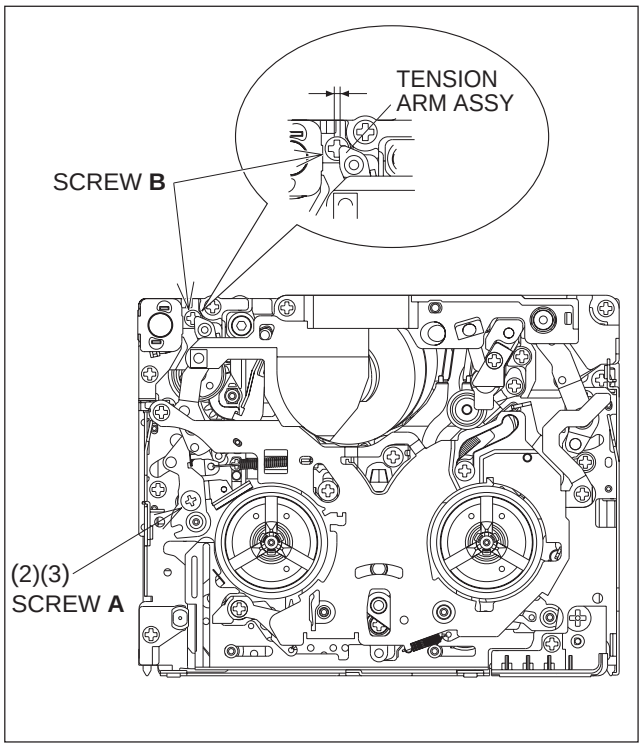


Fig.2-1-27

2.1.7.3 Adjustment of the Slide Lever 2

Use Fig. 2-1-28 as the reference unless otherwise specified.

(1) Set the C IN mode.
See Fig. 2-1-4.
(2) Loosen the screw **A**.
(3) Set the Main Deck and Slide Deck Assemblies apart so that they do not rattle, then tighten the screw **A** by screwing it fully toward the Drum Assembly.
The tightening torque should be 0.069 N•m (0.7 kgf•cm).
(4) Check the operation.
Repeat unloading and loading several times and make sure that these operations can be performed smoothly without producing rattles.

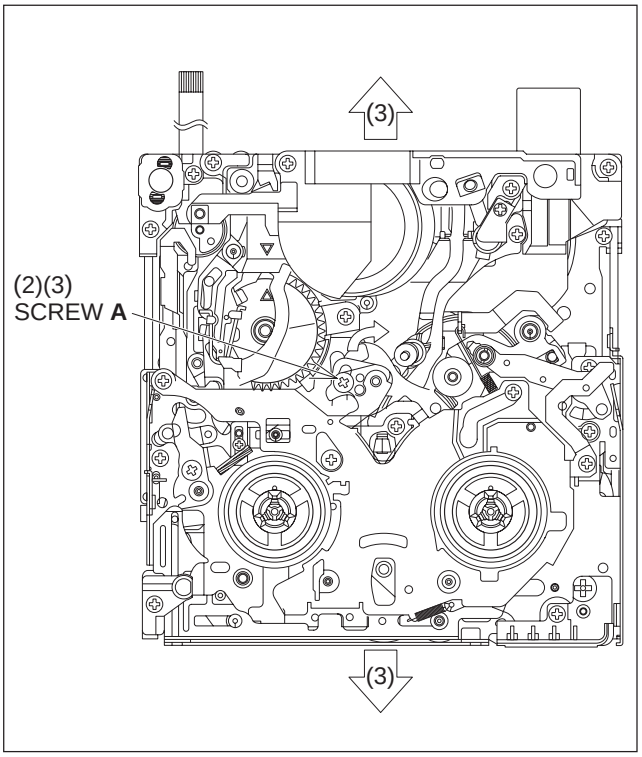


Fig.2-1-28

2.1.8 SERVICE NOTE

Use the following chart to manage mechanism parts that are removed for disassembling the mechanism.

Fig.2-1-14

[1] CASSETTE HOUSING ASSY

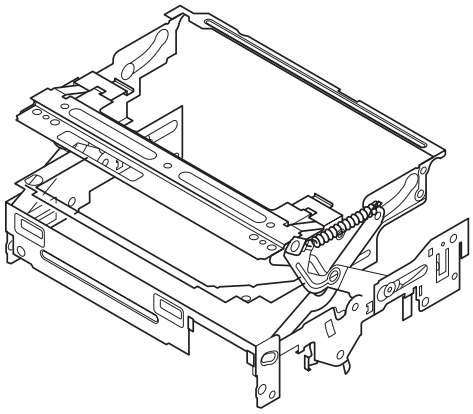


Fig.2-1-15

[2] UPPER BASE ASSY

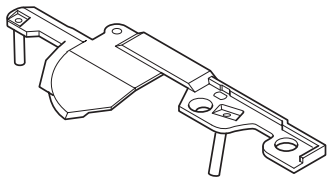


Fig.2-1-15

[3] DRUM ASSY

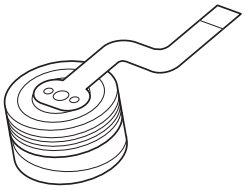
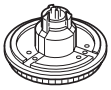
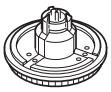


Fig.2-1-16

[4] REEL DISK ASSY(SUP)



[5] REEL DISK ASSY(TU)



[6] REEL COVER ASSY

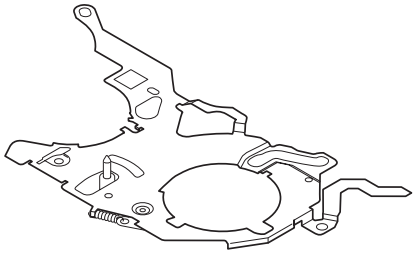
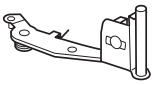


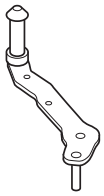
Fig.2-1-17

[7] TENSION ARM ASSY

[8] SLANT POLE ARM ASSY



[9] TU ARM ASSY



[10] SWING ARM ASSY

Fig.2-1-18

[11] SLIDE DECK ASSY

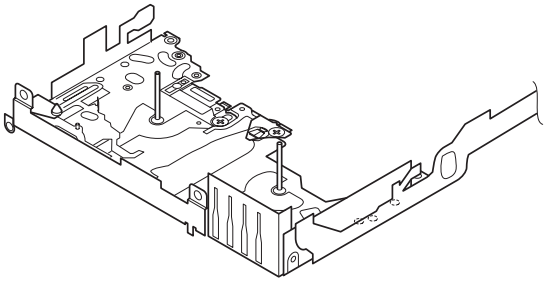


Fig.2-1-19

[12] PAD ARM ASSY

[13]

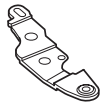
—

[14] TU BRAKE ASSY

Fig.2-1-29

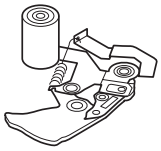
Fig.2-1-20

[15] TENSION CTL LEVER ASSY

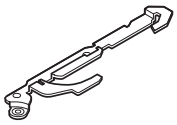


[16] CENTER GEAR

[17] PINCH ROLLER ARM F ASSY



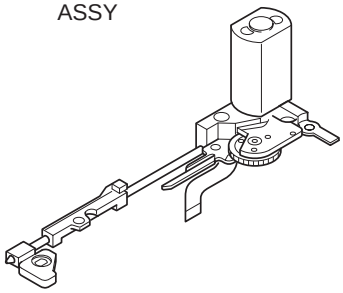
[18] TENSION CTL PLATE ASSY



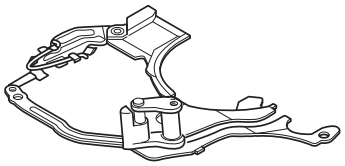
[19] BRAKE CTL LEVER ASSY

Fig.2-1-21

[20] MOTOR BRACKET ASSY



[21] GUIDE RAIL ASSY



[22] SLIDE LEVER 2 ASSY

[23] LOADING PLATE ASSY

[24] MODE GEAR

[25] EJECT LEVER

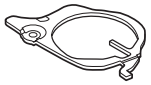
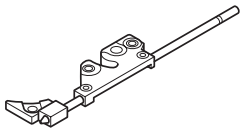
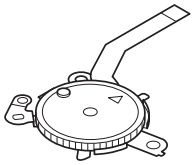


Fig.2-1-22

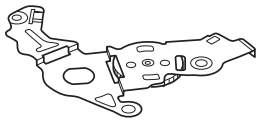
[26] BASE R ASSY



[27] ROTARY ENCODER



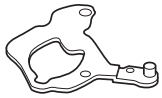
[28] GEAR COVER ASSY



[29] MAIN CAM ASSY

Fig.2-1-23

[30] SLIDE ARM ASSY



[31] CONNECT GEAR 2

[32] SUB CAM ASSY

[33] CONTROL ARM ASSY

[34] REEL GEAR 1

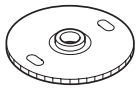
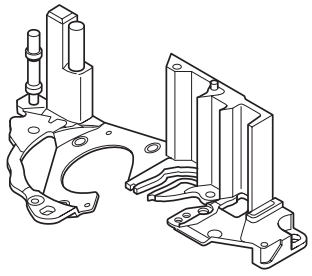
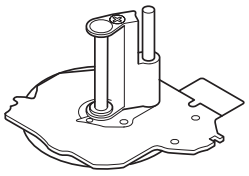


Fig.2-1-24

[35] DRUM BASE ASSY



[36] CAPSTAN MOTOR



[37] MAIN DECK ASSY

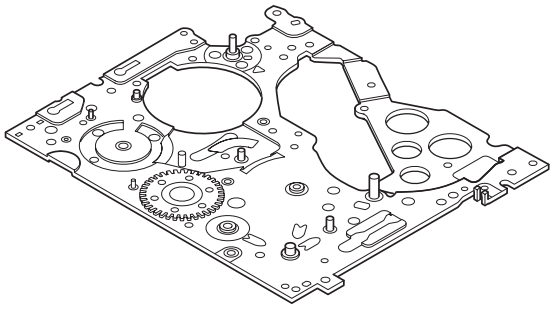


Fig.2-1-30

2.1.9 SERVICE NOTE

Use the following chart to manage screws.

Symbol No.	[1]		[2]	[3]			[6]			[10]	[11]			[20]			[21]	[22]	
Removing order of screw	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Place to stick screw																				
Reference drawing (Fig. No.2-1-**)	14			15				16			17	18			21				22	
Screw tightening torque	Ⅰ			Ⅱ																Ⅲ

Symbol No.	[27]		[28]			[32]	[35]			[36]
Removing order of screw	21	22	23	24	25	26	27	28	29	30
Place to stick screw										
Reference drawing (Fig. No.2-1-**)	22					23	24			
Screw tightening torque	Ⅱ						Ⅳ			Ⅴ

<NOTE>

·Pay careful attention to tightening torque for each screw.

Ⅰ : 0.069N·m(0.7kgf·cm)　　Ⅱ : 0.055N·m(0.56kgf·cm)　　Ⅲ : 0.0198N·m(0.2kgf·cm)

Ⅳ : 0.078N·m(0.8kgf·cm)　　Ⅴ : 0.039N·m(0.4kgf·cm)

Fig.2-1-31

2.1.10 REMARKS

2.1.10.1 Cleaning

(1) For cleaning of the upper drum (particularly video heads), use fine-woven cotton cloth with alcohol soaks through. Do not move the cloth but turn the upper drum counterclockwise.

NOTE:
Make sure not to move the cloth in the vertical direction to the video head, since it may cause damage of the video heads.

(2) For cleaning of parts of the tape transport system except the upper drum, use fine-woven cotton cloth or cotton swab soaked alcohol.

(3) After cleaning, confirm that the cleaned parts are completely dry before loading the deck with cassette tape.

2.1.10.2 Applying oil and grease

(1) Periodical oiling and greasing are not required but should be done to new parts when replacing. If oil and grease on the other parts of the other party are old and dirty, wipe them clean and apply new oil or grease.

(2) For parts and points to apply oil and grease, refer to the exploded view of the 3.1 DVC MECHANISM ASSEMBLY. Fig.2-1-32 specifies oil and grease to be used.

(3) When oiling, clean the objective parts with alcohol first and apply one or two drop(s) of oil. Too much oiling causes rotary parts to slip because of oil leakage.

Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	YTU94027	BB
Grease (HANARL)	RX-410R	CC

specifies oil and grease to be used

Fig.2-1-32

2.2 VHS-C MECHANISM

2.2.1 Precautions

(1) When fastening parts, pay careful attention to the tightening torque of each screw. Unless otherwise specified, tighten a screw with the torque of 0.216 N•m (2.2 kgf•cm). Torque setting value of torque driver is limited. At the values over the maximum torque setting value, fasten a screw manually not to damage the screw thread.
(2) Be sure to disconnect the set from the power supply before fastening and soldering parts.
(3) When disconnecting/connecting wires, be careful not to get them and their connectors damaged.
(4) When replacing parts, be very careful neither to damage other parts nor to fit wrong parts by mistake.

Example

STEP/LOC. No.	PART NAME		FIG.	REMOVAL POINT	INSTALLATION ADJUSTMENT CONDITION NOTE
[1]	ROLLER BASE ASSEMBLY	T	M1	(S1)	–
[2]	TENSION ARM ASSEMBLY	T	M1	(P1), (W1a)	–
[3]	REEL DISC (SUP)	T	M1	(W1a), (W1b)	–
↑ *1	↑ *2	↑ *3	↑ *4	↑ *5	↑ *6

2.2.2 How to read the disassembly and assembly

*1 Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.
*2 Part to Name be removed or installed.
*3 Location of part.

T = The Upper side
B = The Lower side

*4 Fig. No. showing Procedure or Part Location.
M = Mechanism
*5 Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.

P = Spring
W = Washer
S = Screw
* = Unhook, unlock, release, unplug or unsolder.

Example

- Remove (W1)=Washer W1.
- Remove the solder at (SD1)=Point SD1.
- Disconnect A = Connector A.

*6 Adjustment information for installation.
(+) = Refer to Exploded Views for Lubrication information.

2.2.3 DISASSEMBLY/ASSEMBLY PROCEDRURE TABLE

This procedure starts with the condition that the cabinet parts and deck parts. Also, all the following procedures for adjustment and parts replacement should be performed in STOP mode. When reassembling, perform the step(s) in the reverse order.

STEP/LOC. No.	PART NAME		FIG.	REMOVAL POINT	INSTALLATION ADJUSTMENT CONDITION NOTE
[1]	ROLLER BASE ASSY	T	M1	(1)	–
[2]	TENSION ARM ASSY	T	M1	(P1), (W1a)	–
[3]	REEL DISC	T	M1	(W1a), (W1b)	–
[4]	SLANT ARM ASSY	T	M1	(W1a)	–
[5]	CANCEL LEVER ASSY	T	M2	(W2)	–
[6]	EJECT LEVER ASSY	T	M2	(W2)	–
[7]	CASSETTE GUIDE (LEFT)	T	M2	(2)	–
[8]	SUPPLY CLUTCH ASSY	T	M2	(W2)	–
[9]	WHEEL GEAR	T	M2	(W2)	See, Adjustment procedure for Section 2.2.5
[10]	ROTARY ENCODER	B	M3	4(S3a)	The function of this part varies according to the ASSY (VHS/SVHS) which this part is rporated in. (Refer to fig. 2-2-6)
[11]	TIMING BELT	B	M3	–	–
[12]	CENTER PULLEY UNIT	T/B	M3	2(S3a)	–
[13]	CASSETTE GUIDE (R) ASSY	T	M3	(S3b), (P3)	(Only use SVHS model)
[14]	TAKE UP GEAR	T	M3	(W3a)	–
[15]	BRAKE SUB GEAR	T	M3	(W3a)	–
[16]	PINCH ROLLER ARM ASSY	T	M3	(W3b)	–
[17]	TAKE UP GUIDE ARM ASSY	T	M3	(W3a)	–
[18]	LINK ARM ASSY	T	M4	(W4)	–
[19]	LED GUIDE	T	M4	(S4a)	–
[20]	A/C HEAD UNIT	T	M4	2(S4b)	–
[21]	SLANT POLE BASE ASSY	T	M5	(S5a)	–
[22]	CAPSTAN MOTOR	T	M5	3(S5a)	–
[23]	MOTOR BASE	T	M5	2(S5b), (S5c)	–
[24]	BRUSH	B	M6	(S6a)	–
[25]	DRUM FINAL ASSY	T/B	M6	2(S6b), 2(S6c) *CATCHER	–
[26]	GUIDE RAIL	T	M6	7(S6d), 8(S6d)	(Refer to part list.)
[27]	POLE BASE (S)ASSY	T	M6	–	–
[28]	POLE BASE (T)ASSY	T	M6	–	–
[29]	COVER PLATE	T	M7	–	–
[30]	DRIVE LEVER ASSY	T	M7	–	–
[31]	MOTOR BRACKET ASSY	T	M7	3(S7)	–
[32]	CONTROL CAM	T	M8	(W8a)	See, Adjustment procedure for Section 2.2.5
[33]	LINK LEVER	T	M8	_	See, Adjustment procedure for Section 2.2.5
[34]	MIDDLE GEAR	T	M8	–	–
[35]	LOADING GEAR(T) ASSY	T	M8	(W8b)	See, Adjustment procedure for Section 2.2.5
[36]	LOADING GEAR(S) ASSY	T	M8	(W8b)	–
[37]	LOADING RING ASSY	T	M8	4(S8)	See, Adjustment procedure for Section 2.2.5

Fig.2-2-1

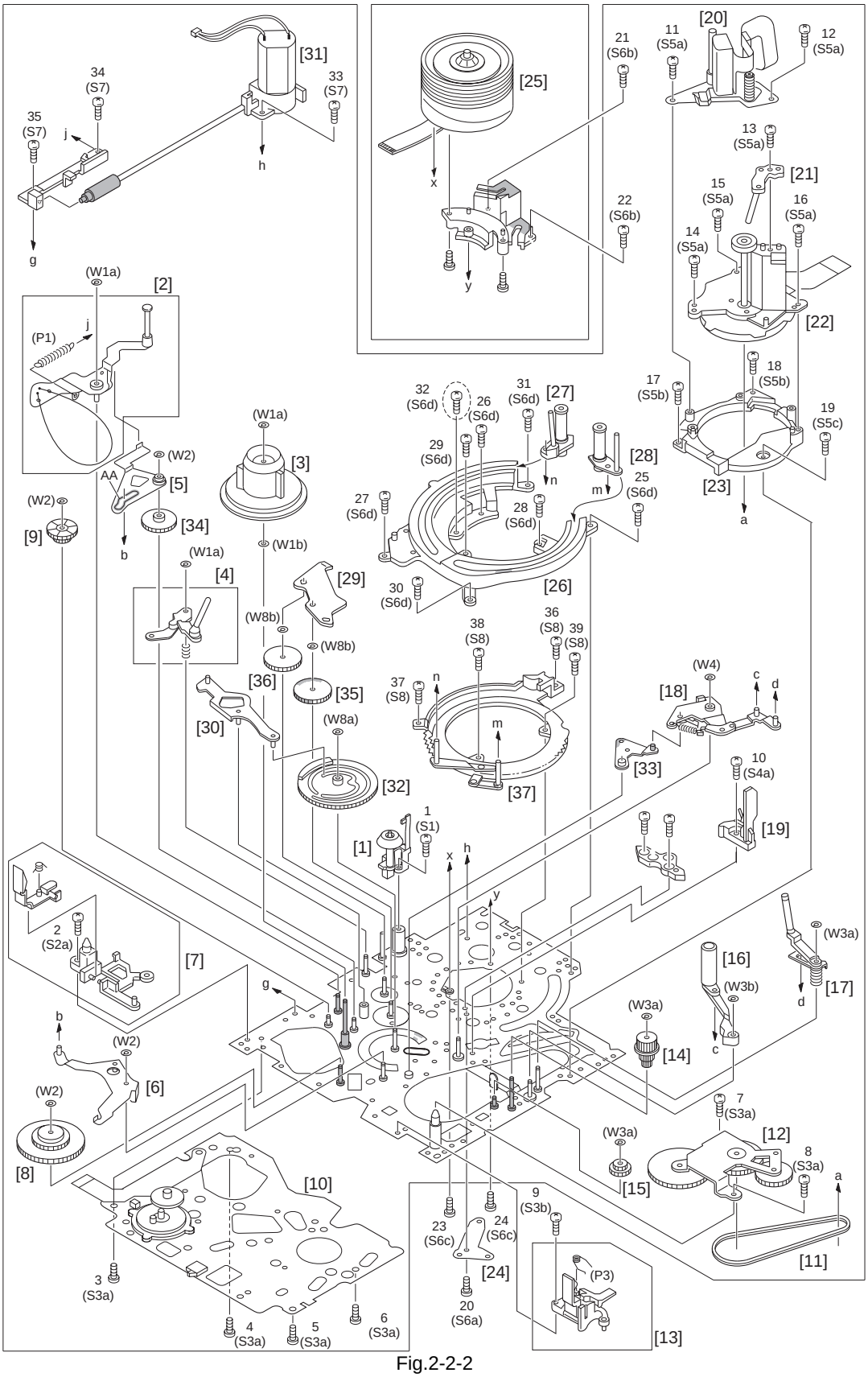

[31]
34 (S7)
33 (S7)
35 (S7)
j
h
g
[25]
x
y
21 (S6b)
22 (S6b)
[20]
11 (S5a)
12 (S5a)
13 (S5a)
[21]
15 (S5a)
16 (S5a)
14 (S5a)
[22]
(W1a)
[2]
(P1)
j
AA
(W2)
[5]
b
[34]
[9]
(W2)
(W1a)
[3]
(W1b)
[4]
[29]
(W8b)
(W8b)
[36]
[35]
[30]
(W8a)
[32]
32 (S6d)
26 (S6d)
31 (S6d)
[27]
29 (S6d)
n
[28]
m
25 (S6d)
27 (S6d)
28 (S6d)
30 (S6d)
[26]
17 (S5b)
18 (S5b)
19 (S5c)
[23]
a
38 (S8)
36 (S8)
39 (S8)
37 (S8)
n
m
[37]
(W4)
c
d
[18]
[33]
10 (S4a)
[19]
[1]
1 (S1)
x
h
y
2 (S2a)
[7]
g
b
(W2)
[6]
(W2)
[8]
[10]
3 (S3a)
4 (S3a)
5 (S3a)
6 (S3a)
23 (S6c)
24 (S6c)
9 (S3b)
[24]
20 (S6a)
(P3)
[13]
(W3a)
[16]
(W3b)
c
(W3a)
[14]
(W3a)
[17]
d
7 (S3a)
(W3a)
[15]
[12]
8 (S3a)
a
[11]

Fig.2-2-2

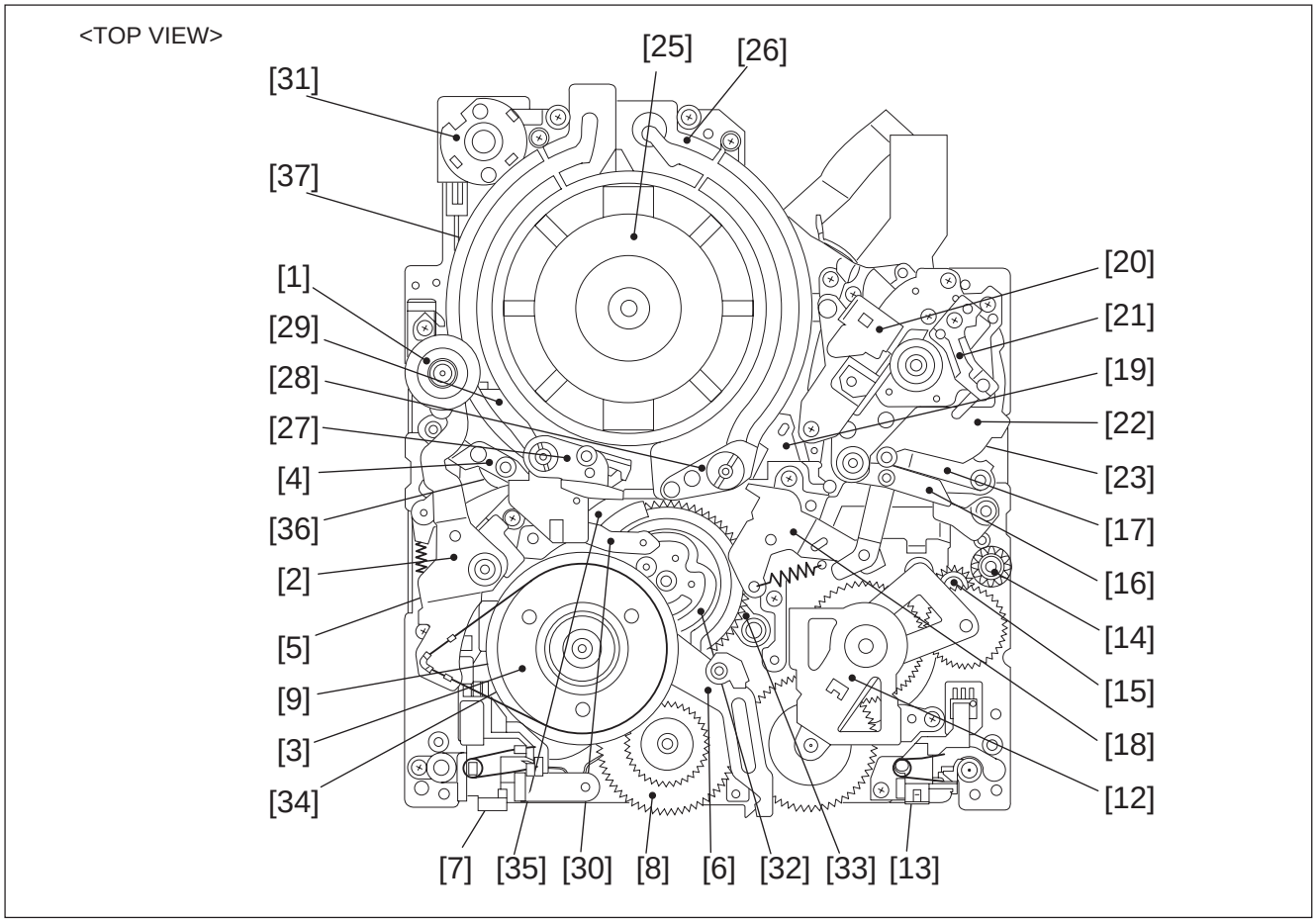


Fig.2-2-3

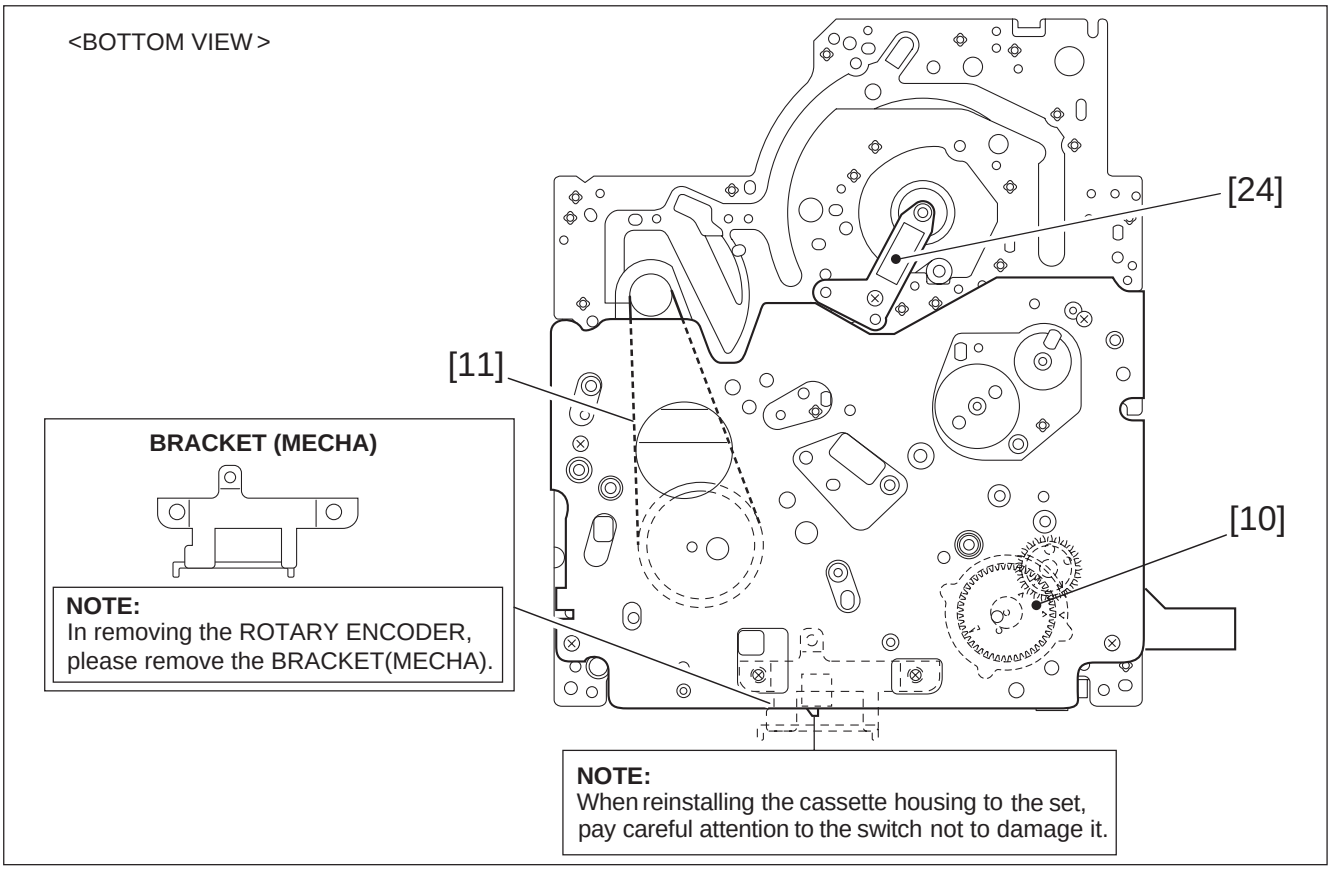


Fig.2-2-4

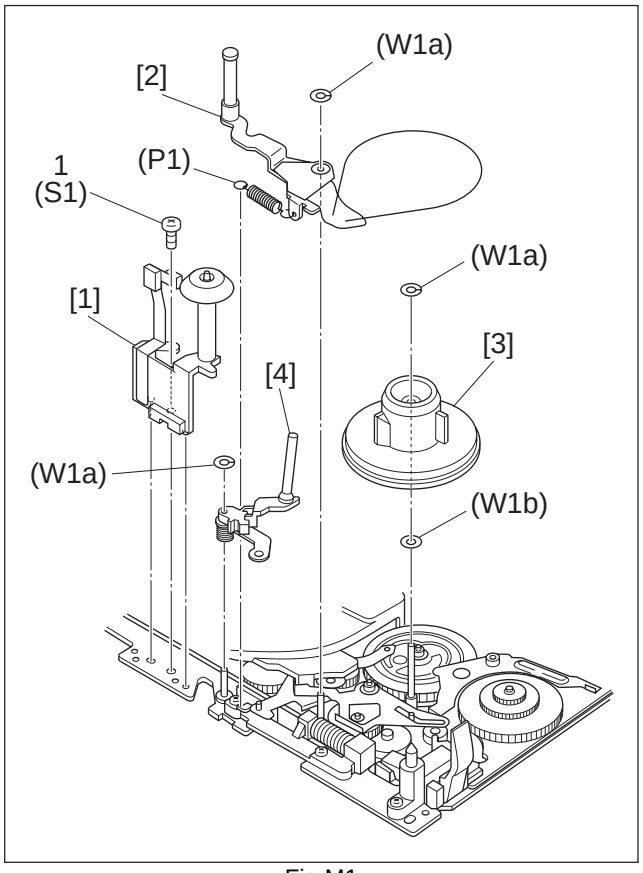


Fig.M1

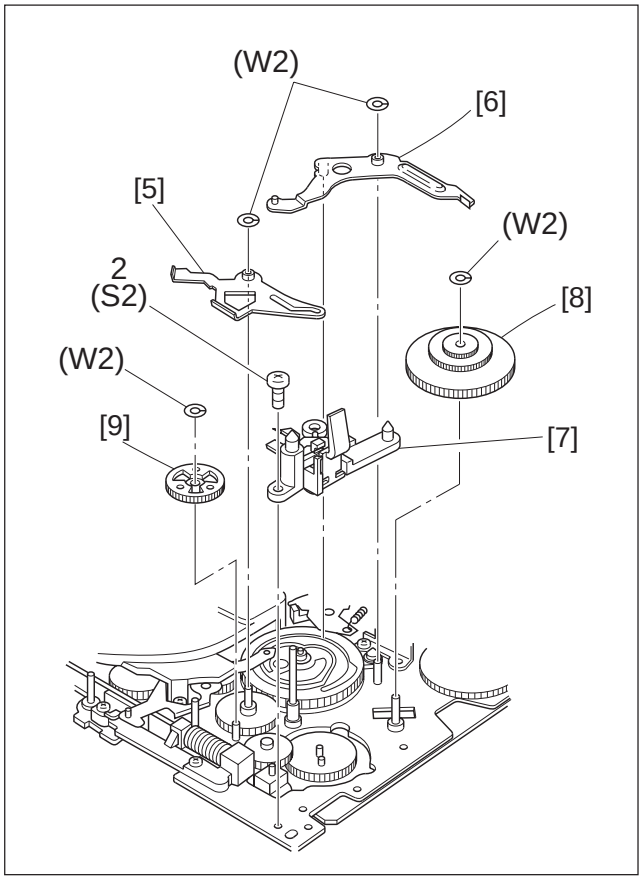


Fig.M2

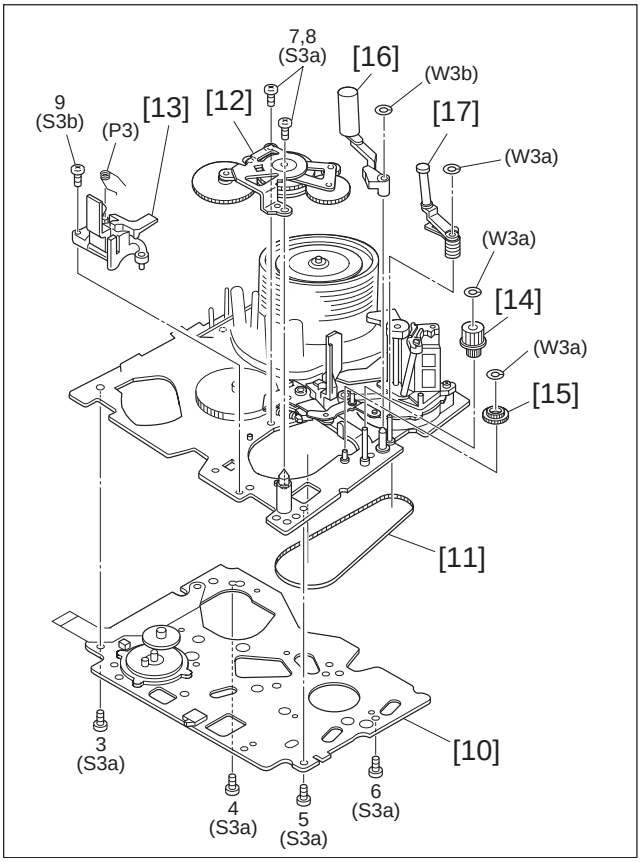


Fig.M3

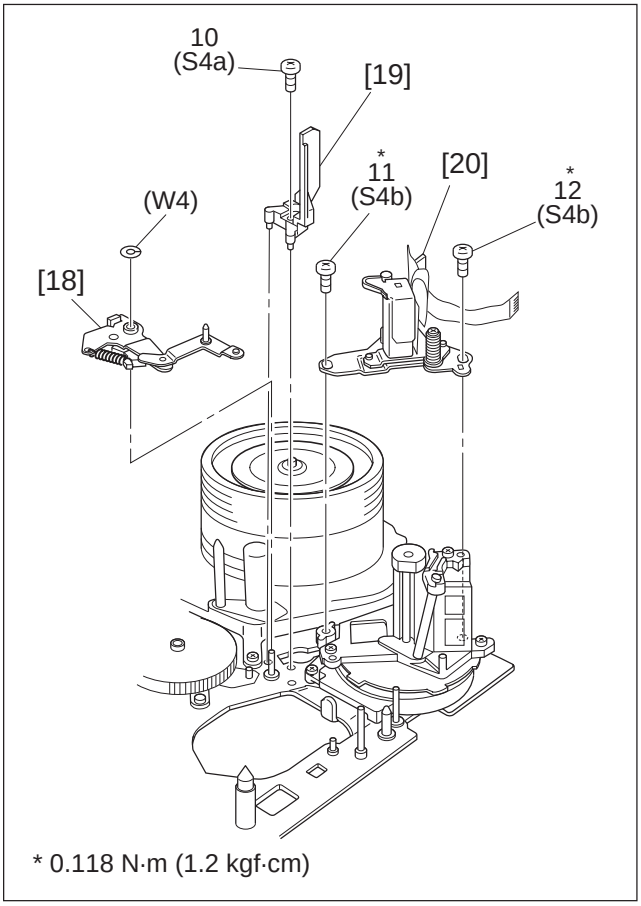


Fig.M4

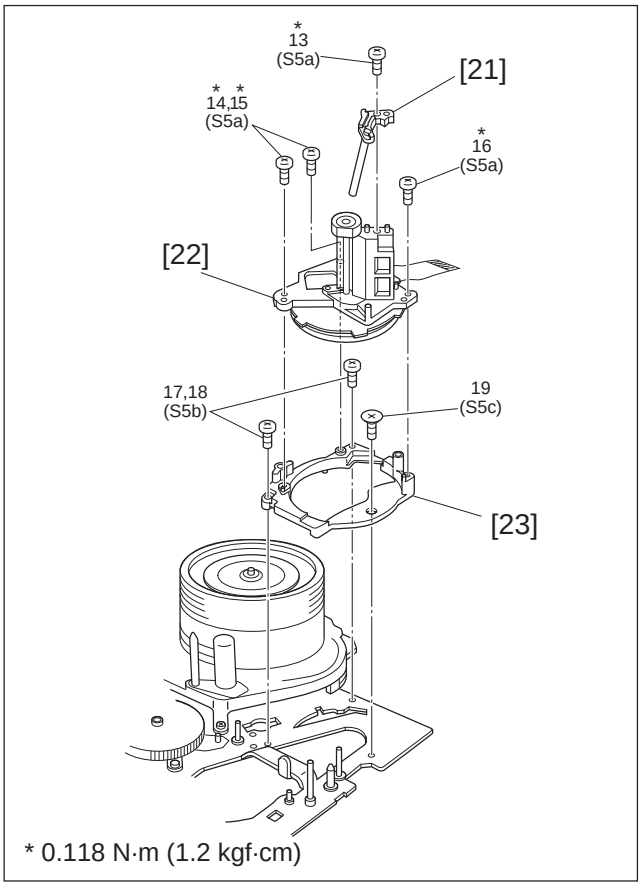


Fig.M5

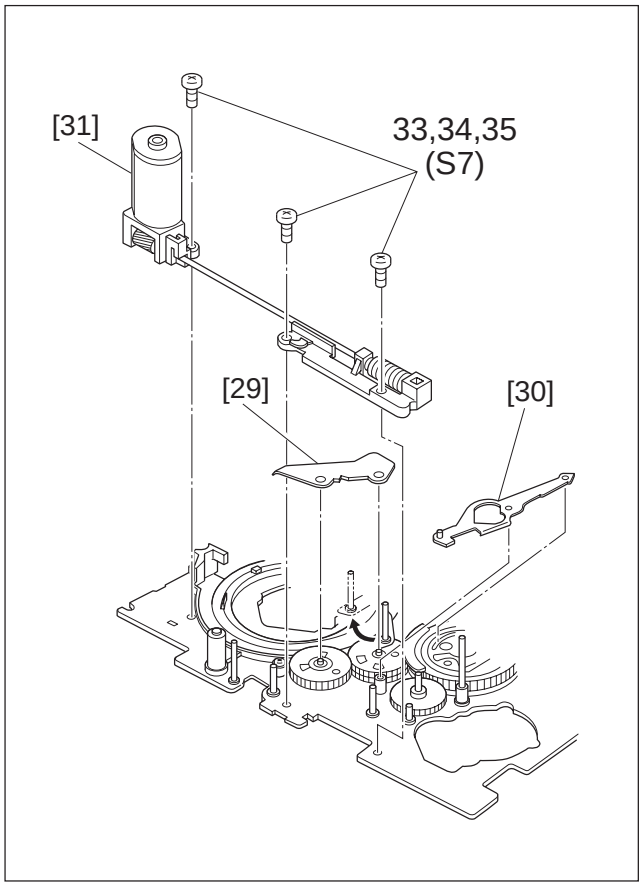


Fig.M7

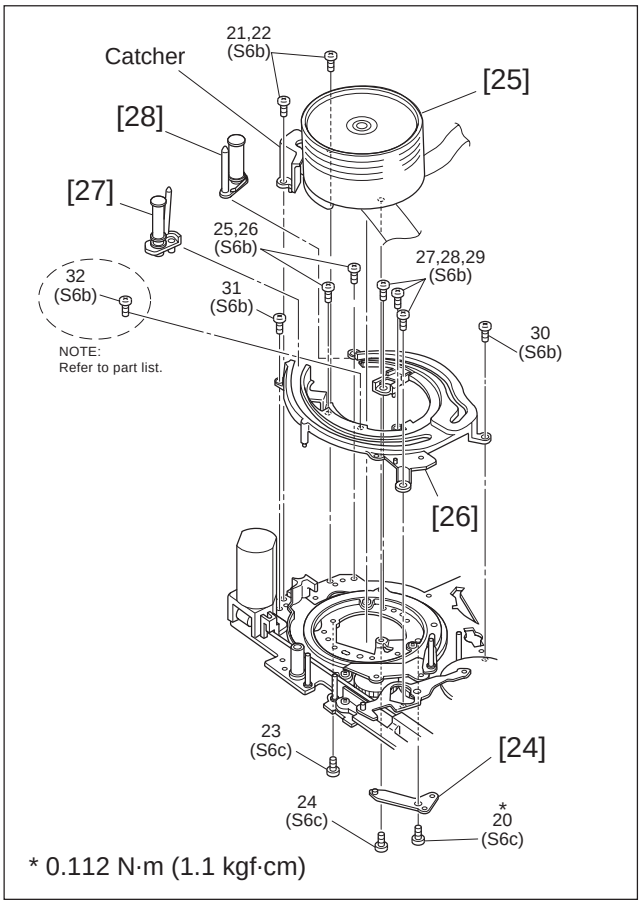


Fig.M6

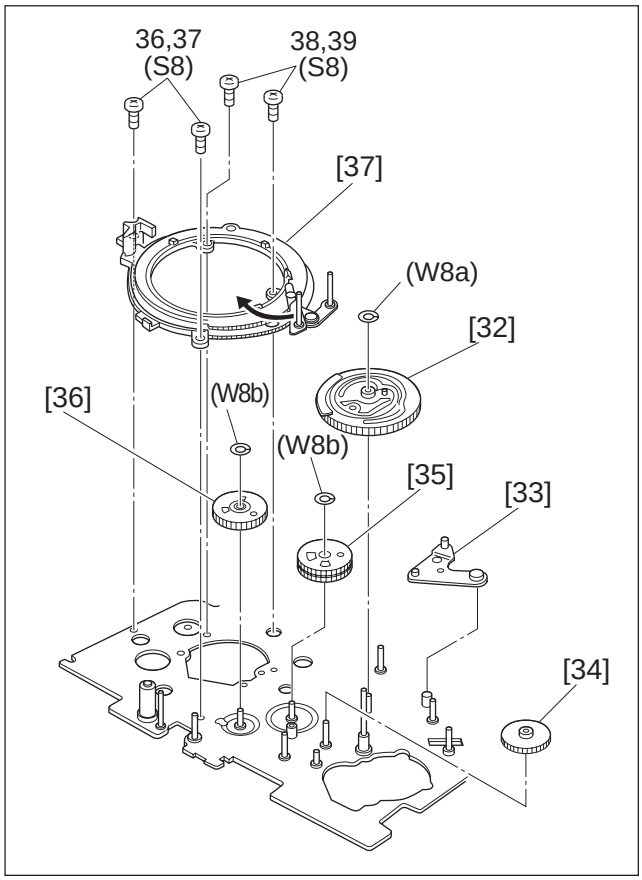


Fig.M8

2.2.4 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

NOTE:

Pay careful attention to the installing order and phase of mechanism parts of the loading system.

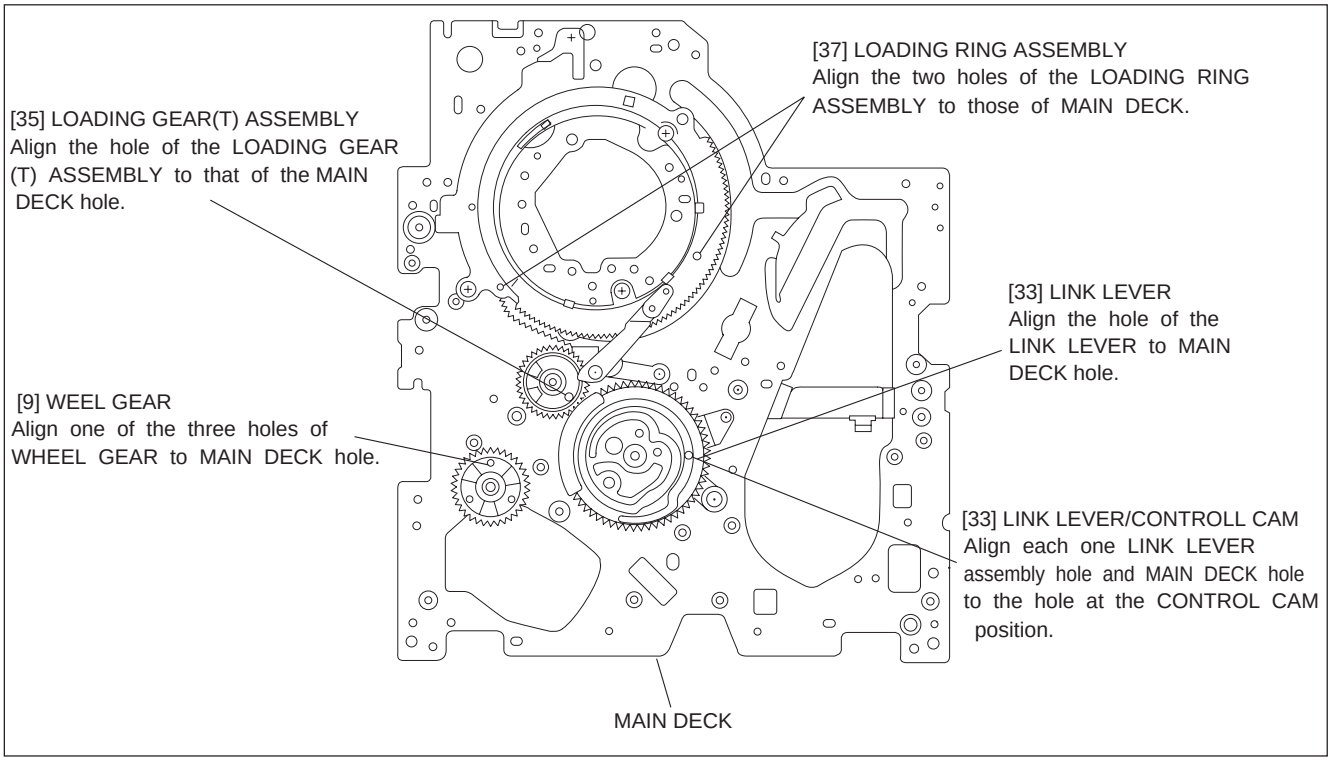

[37] LOADING RING ASSEMBLY
Align the two holes of the LOADING RING ASSEMBLY to those of MAIN DECK.
[35] LOADING GEAR(T) ASSEMBLY
Align the hole of the LOADING GEAR (T) ASSEMBLY to that of the MAIN DECK hole.
[33] LINK LEVER
Align the hole of the LINK LEVER to MAIN DECK hole.
[9] WEEL GEAR
Align one of the three holes of WHEEL GEAR to MAIN DECK hole.
[33] LINK LEVER/CONTROLL CAM
Align each one LINK LEVER assembly hole and MAIN DECK hole to the hole at the CONTROL CAM position.
MAIN DECK

Fig.2-2-5 Top of main deck

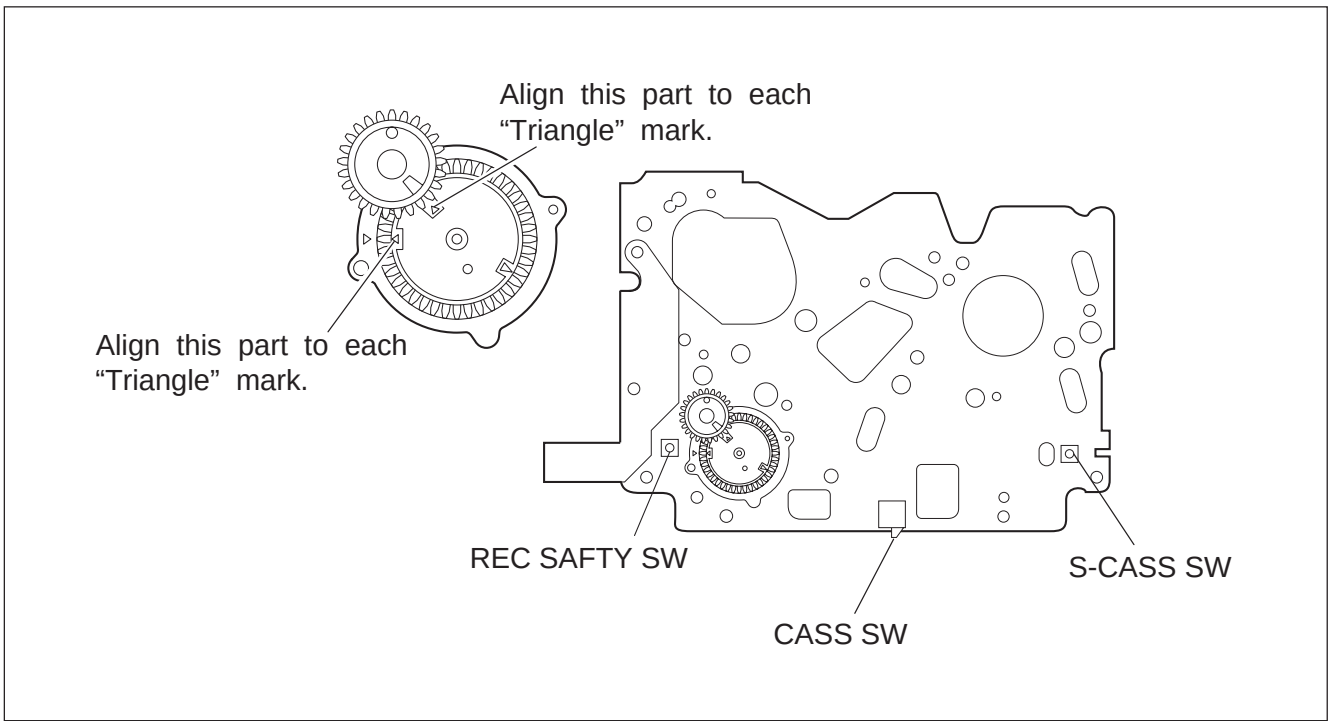


Fig.2-2-6 Rotary encoder

2.2.5 SERVISE NOTE

Use the following chart to manage screws.

Symbol No.	[1]	[7]	[10]				[12]		[13]	[19]	[20]		[21]	[22]			[23]		
Removing order of screw	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Place to stick screw																			
Reference drawing (Fig. No.)	M1	M2	M3							M4			M5						
Screw tightening torque	I										II						I		

Symbol No.	[24]	[25]			[26]							[31]			[37]		
Removing order of screw	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Place to stick screw																				
Reference drawing (Fig. No.)	M6													M7			M8			
Screw tightening torque	III	I																		

<NOTE>

・Pay careful attention to tightening torque for each screw.
Torque setting value of torque driver is limited. At the values over the maximum torque setting value, fasten a screw manually not to damage the screw thread.

I : 0.216N・m(2.2kgf・cm)　　II : 0.118N・m(1.2kgf・cm)　　III : 0.112N・m(1.1kgf・cm)

Fig.2-2-7

2.2.6 REMARKS

2.2.6.1 Cleaning

(1) For cleaning of the upper drum (particularly video heads), use fine-woven cotton cloth with alcohol soaks through. Do not move the cloth but turn the upper drum counterclockwise.

NOTE:
Make sure not to move the cloth in the vertical direction to the video head, since it may cause damage of the video heads.

(2) For cleaning of parts of the tape transport system except the upper drum, use fine-woven cotton cloth or cotton swab soaked alcohol.

(3) After cleaning, confirm that the cleaned parts are completely dry before loading the deck with cassette tape.

2.2.6.2 Applying oil and grease

(1) Periodical oiling and greasing are not required but should be done to new parts when replacing. If oil and grease on the other parts of the other party are old and dirty, wipe them clean and apply new oil or grease.

(2) For parts and points to apply oil and grease, refer to the exploded view of the 3.2 VHS-C MECHANISM ASSEMBLY. Fig.2-2-8 specifies oil and grease to be used.

(3) When oiling, clean the objective parts with alcohol first and apply one or two drop(s) of oil. Too much oiling causes rotary parts to slip because of oil leakage.

Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	YTU94027	BB

specifies oil and grease to be used

Fig.2-2-8

2.3 VHS MECHANISM

2.3.1 Notes

This model's mechanism relates closely to the rotary encoder and system control circuit (the rotary encoder is meshed with the control cam).
The system control circuit detects the mechanism condition using the rotary encoder's phase (internal switch phase). Therefore, the parts such as the rotary encoder, control plate, loading gear and control cam need to be installed correctly in order for the mechanism to operate properly. (For the mechanism phase adjustment, refer to the installation of each part.)

- Before using a soldering iron, be sure to disconnect the power plug from the AC outlet.
- Do not touch any of the adjustment points until a defect position is specified.
- When plugging or unplugging the connector, be sure not to damage the wire.
- Be sure the springs are hooked all the way around and in the correct direction.
- When performing repairs, take care not to damage a catch, etc.

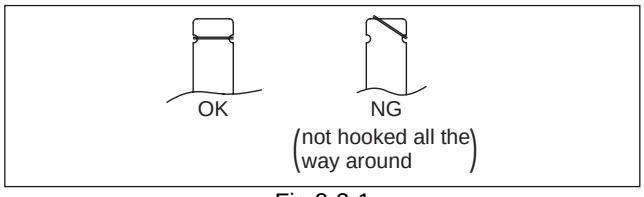


Fig.2-3-1

2.3.2 Mechanism operation check

When the mechanism is operated without a cassette loaded, operate the mechanism in the mechanism service mode.

2.3.3 Setting the mechanism assembling mode

The mechanism-assembling mode is provided with this mechanism. When disassembling and assembling, it is required to engage this mode.
Set the mode by adopting the following procedures.

(1) Remove the mechanism assembly using the disassembling procedure.
(2) Turn gear (a) of the loading motor manually to set the mechanism assembly to the eject end mode. Make sure that the main deck is connected to the guide hole (a) of the drive lever and the seal (a) of the main deck is connected to the mark "E" of the control plate. This condition is called the mechanism-assembling mode.

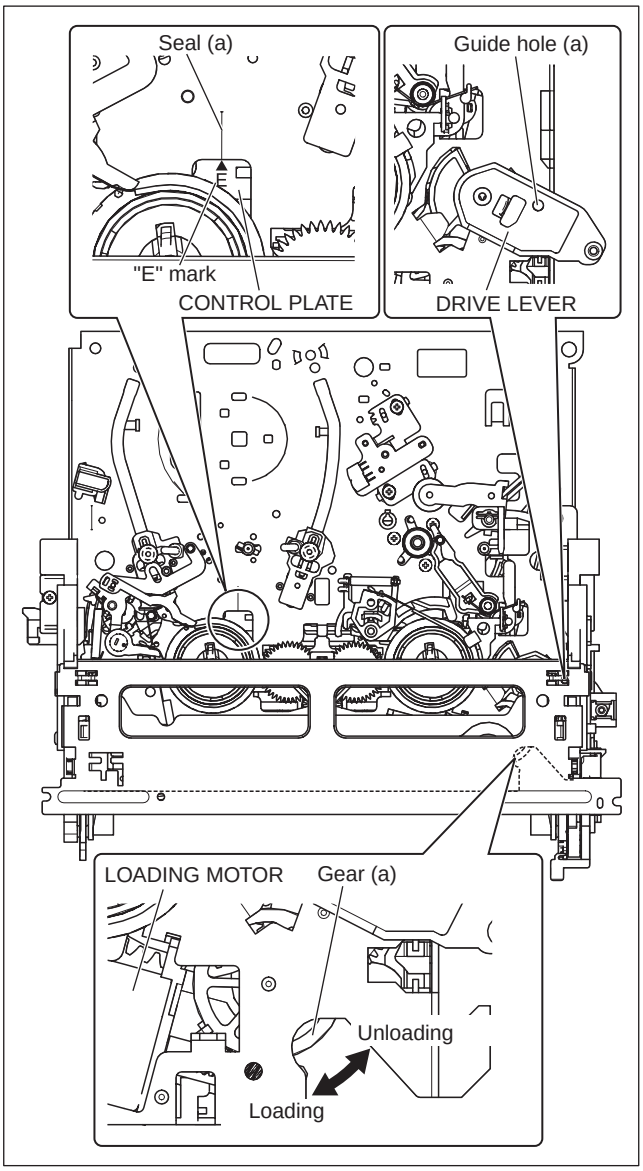


Fig.2-3-2

2.3.4 Layout of the main mechanism parts

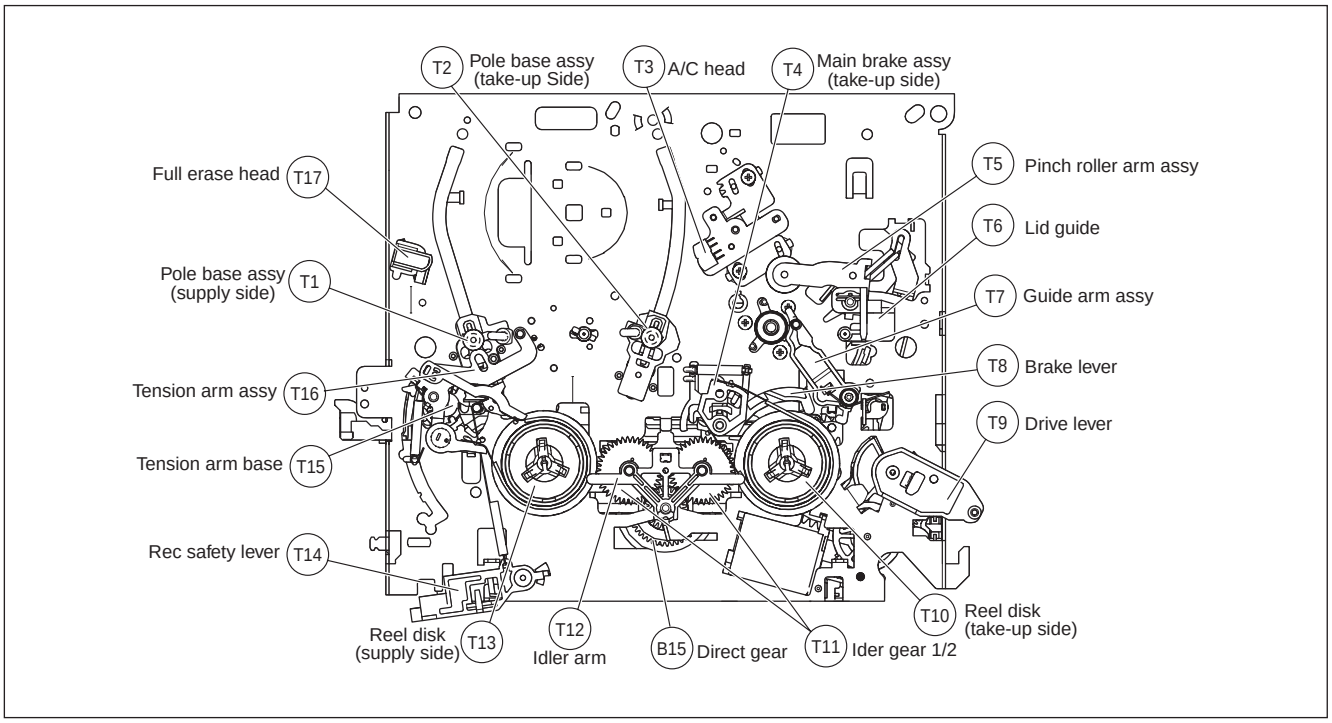

T2 Pole base assy (take-up Side)
T3 A/C head
T4 Main brake assy (take-up side)
Full erase head T17
T5 Pinch roller arm assy
T6 Lid guide
Pole base assy (supply side) T1
T7 Guide arm assy
T8 Brake lever
Tension arm assy T16
T9 Drive lever
Tension arm base T15
Rec safety lever T14
T10 Reel disk (take-up side)
Reel disk (supply side) T13
T12 Idler arm
B15 Direct gear
T11 Ider gear 1/2

Fig.2-3-3

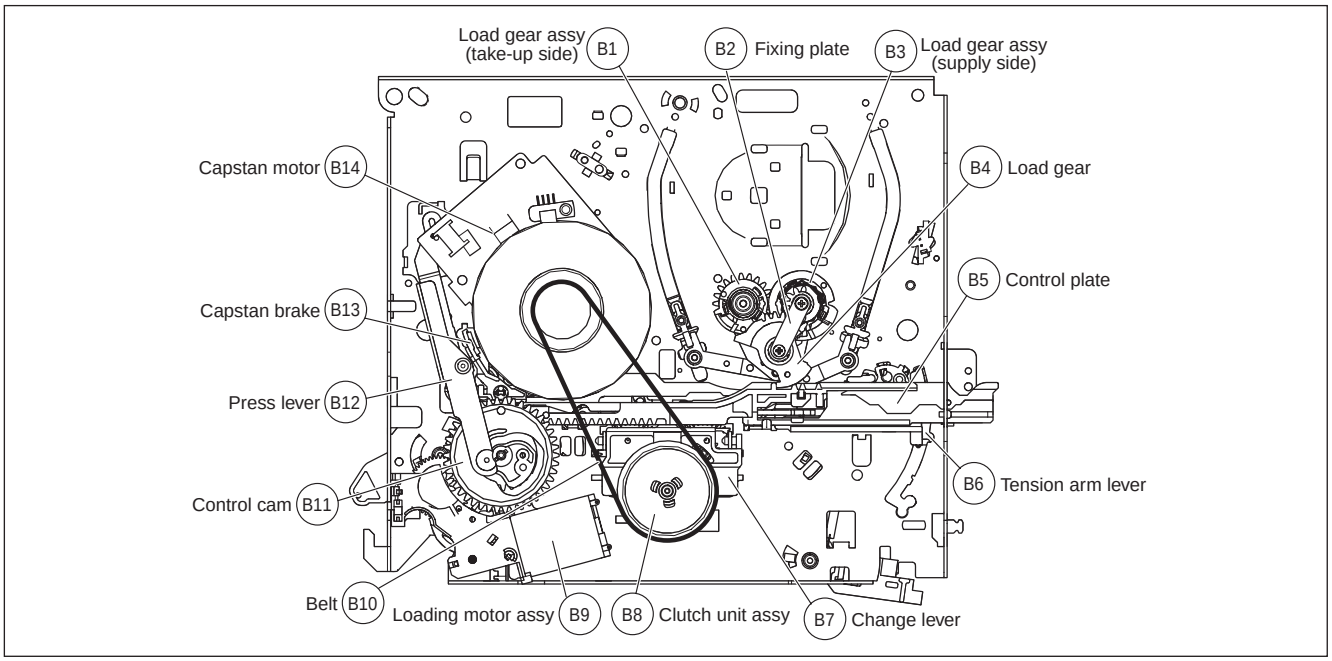


Fig.2-3-4

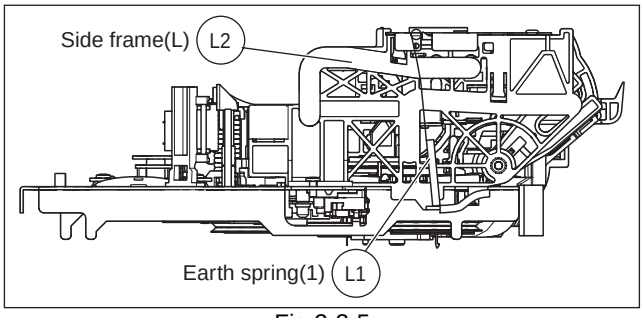


Fig.2-3-5

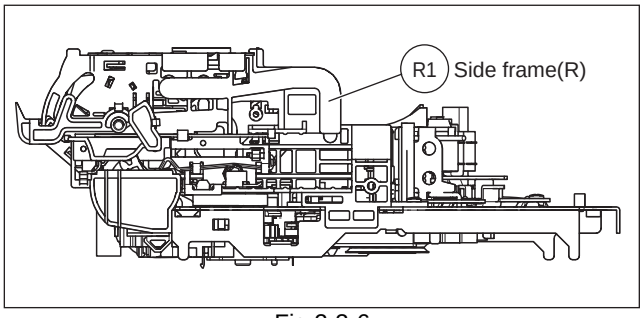


Fig.2-3-6

2.3.5 Disassembling procedure table

This table shows the order of parts removal when replacing each part. For replacement, remove the parts in the order of 1 to 13 shown in the table and install the parts in the reverse order.

The symbol number before each part name shows the number in the figure “Layout of the main mechanism parts”. T and B on the right of each part name show the side from which the part should be removed (T: From the front of the mechanism, B: From the rear of the mechanism, T/B: From both sides).

Symbols and numbers	Removal parts / (Reference items) Replacement parts	Front(T)/Back(B) of mechanism	Number of removal steps	L1 Earth spring (1)	- Top frame	- Cassette holder	L2 Side frame (L)	- Drive arm	R1 Side frame (R)	T6 Lid guide	T12 Idler arm	T11 Idler gear 1/2	T4 Main brake (T)	T10 Reel disk (T)	T16 Tension arm	T15 Tension arm base	B12 Press lever	B11 Control cam	B13 Capstan brake assy	B9 Loading motor assy	B10 Belt	B2 Fixing plate	B4 Load gear	B3 Loading gear assy (S)	B1 Loading gear assy (T)	B5 Control plate	B8 Clutch unit	B15 Direct gear
L1	2.1 Earth spring (1)	T	1																									
-	2.1 Top frame	T	2	1																								
-	2.1 Cassette holder	T	3	1	2																							
L2	2.1 Side frame (L)	T	3	1	2																							
-	2.1 Drive arm	T	5	1	2	3	4																					
R1	2.1 Side frame (R)	T	3	1	2																							
T3	2.2 A/C head	T	1																									
T17	- FE head	T/B	1																									
T7	2.3 Guide arm assy	T	1																									
T6	2.3 Lid guide	T	1																									
T5	2.3 Pinch roller arm assy	T	2							1																		
T12	2.4 Idler arm	T	4	1	2	3																						
T11	2.4 Idler gear 1/2	T	5	1	2	3					4																	
T4	2.5 Main brake assy (T)	T	6	1	2	3					4	5																
T10	2.5 Reel disk (T)	T	7	1	2	3					4	5	6															
T16	2.5 Tension arm	T	6	1	2	3					4	5																
T13	2.5 Reel disk (S)	T	7	1	2	3					4	5			6													
T15	2.5 Tension arm base	T	7	1	2	3					4	5			6													
-	- T-up head	T	8	1	2	3					4	5			6	7												
-	- T-up lever	T	8	1	2	3					4	5			6	7												
T8	2.5 Brake lever	T	8	1	2	3					4	5	6	7														
T14	2.5 Rec safety lever	T	7	1	2	3	4	5	6																			
B12	2.6 Press lever	B	1														1											
B11	2.6 Control cam	B	2														1	2										
B13	2.6 Capstan brake assy	B	3														1	2	3									
B9	2.6 Loading motor assy	B	4														1	2	3									
B10	2.7 Belt	B	1																									
B14	2.7 Capstan motor	T/B	2																		1							
-	- Wire holder	T/B	1																									
B2	2.7 Fixing plate	B	1																									
B4	2.7 Load gear	B	2																			1						
B3	2.7 Loading gear assy(S)	B	3																			1	2					
B1	2.7 Loading gear assy(T)	B	4																			1	2	3				
T1	- Pole base assy(S)	T/B	4																			1	2	3				
T2	- Pole base assy(T)	T/B	5																			1	2	3	4			
-	- Load gear base	B	5																			1	2	3	4			
B5	2.7 Control plate	B	6														1	2			3	4	5					
T9	- Drive lever	T/B	10	1	2	3	4	5	6								7	8		9								
B8	2.8 Clutch unit	B	2																		1							
B15	2.8 Direct gear	B	3																		1						2	
B7	- Change lever	T/B	6								1	2									3						4	5
B6	- Tension arm lever	T/B	14	1	2	3					4	5			6	7	8	9			10	11	12			13		

2.3.6 REPLACEMENT OF THE MAIN MECHANISM PARTS

2.3.6.1 Cassette holder

2.3.6.1.1 Removal

(1) Remove the screws (a) and (b).
(2) Hold up the top frame, cassette holder assembly, drive arm assembly and side frames (L/R) all together and remove them by releasing the hooks (a) and (b).

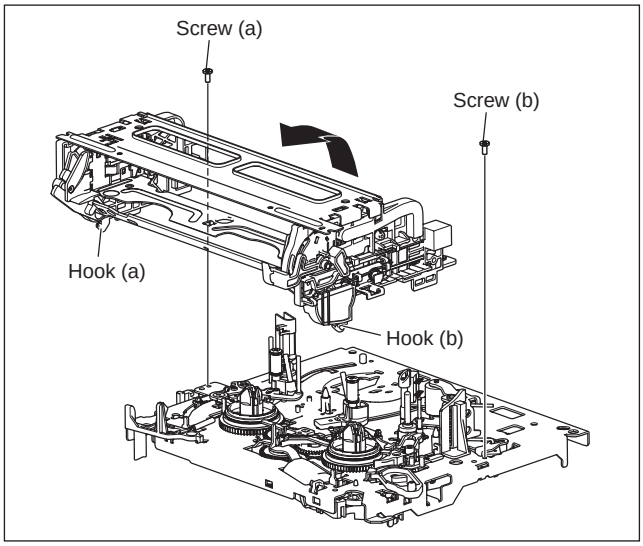


Fig.2-3-7

2.3.6.1.2 Installation (phase adjustment)

(1) Turn gear (a) of the loading motor assembly so that the main deck connects to the guide hole (a) of the drive lever.
(2) Hook the main deck to hooks (a) and (b).
(3) Place the projection of the drive lever to section (a) of the side frame (R) and install the cassette holder to the main deck. Make sure that the bosses of the side frame (L/R) connect with the holes (a) and (b) of the main deck.
(4) Secure screws (a) and (b).

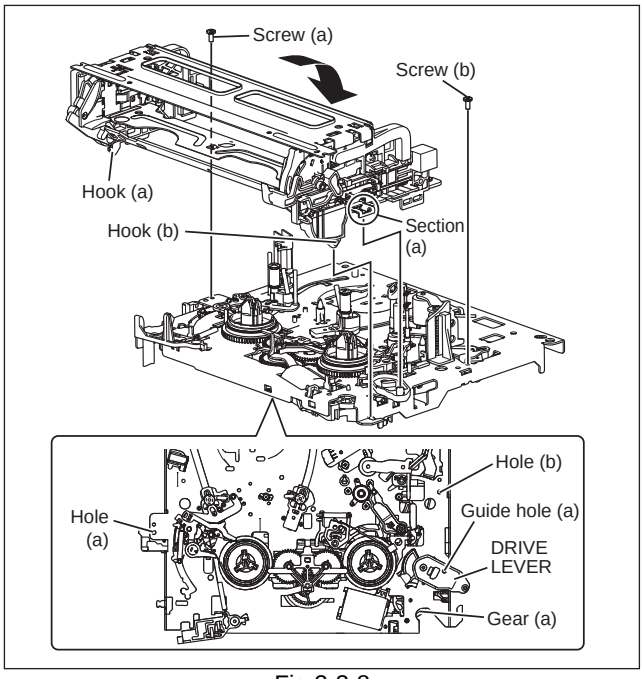


Fig.2-3-8

2.3.6.1.3 Disassembling

(1) Release hook (a) to remove the earth spring (1) from the top frame.
(2) Release the catches (a) and (b) and pull the top frame in the direction shown by the arrow (a) to remove it.
(3) Pull out the side frame (R).
(4) Pull out the cassette holder assembly and drive arm assembly from the side frame (L).

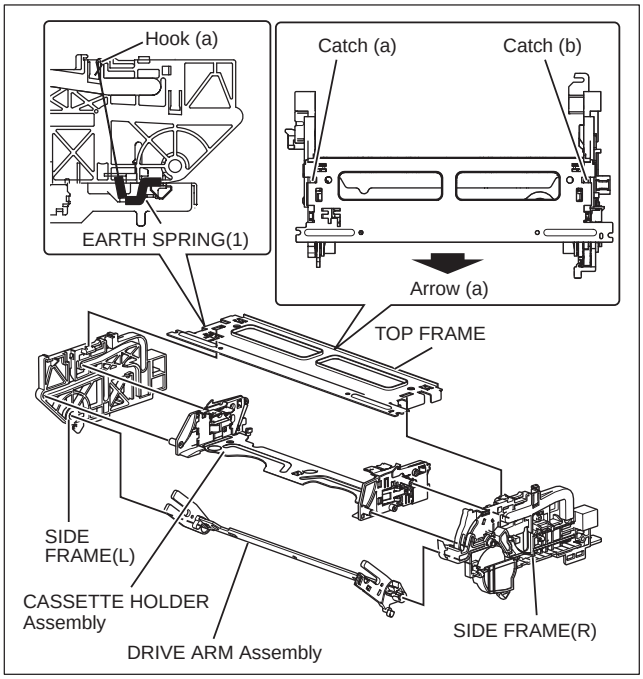


Fig.2-3-9

2.3.6.1.4 Assembling (installation and phase adjustment)

(1) Turn gear (a) of the loading motor assembly so that the main deck connects to the guide hole (a) of the drive lever.
(2) Place the projection of the drive lever on section (a) of the side frame (R) and install the side frame (R) to the main deck.
(3) Secure screw (b).
(4) Place section (b) of the drive arm on the gear of the side frame (R). Make sure that the pin of the door opener connects with section (c) of the drive arm.
(5) Place the drive arm on section (d) of the side frame (L) and install the side frame (L) on the main deck. Be sure to connect the earth spring (1) to the side frame (L).
(6) Secure screw (a).
(7) Turn gear (a) of the loading motor assembly until the drive arm is vertical.
(8) Place the slit of the side frame (L/R) at the foot of the cassette holder assembly and install the cassette holder.
(9) Place the top frame on the position guide (a) of the side frame (L/R) and push it in the direction shown by the arrow (a) for installation.
(10) Hook the earth spring (1) to the hook (a) of the top frame.

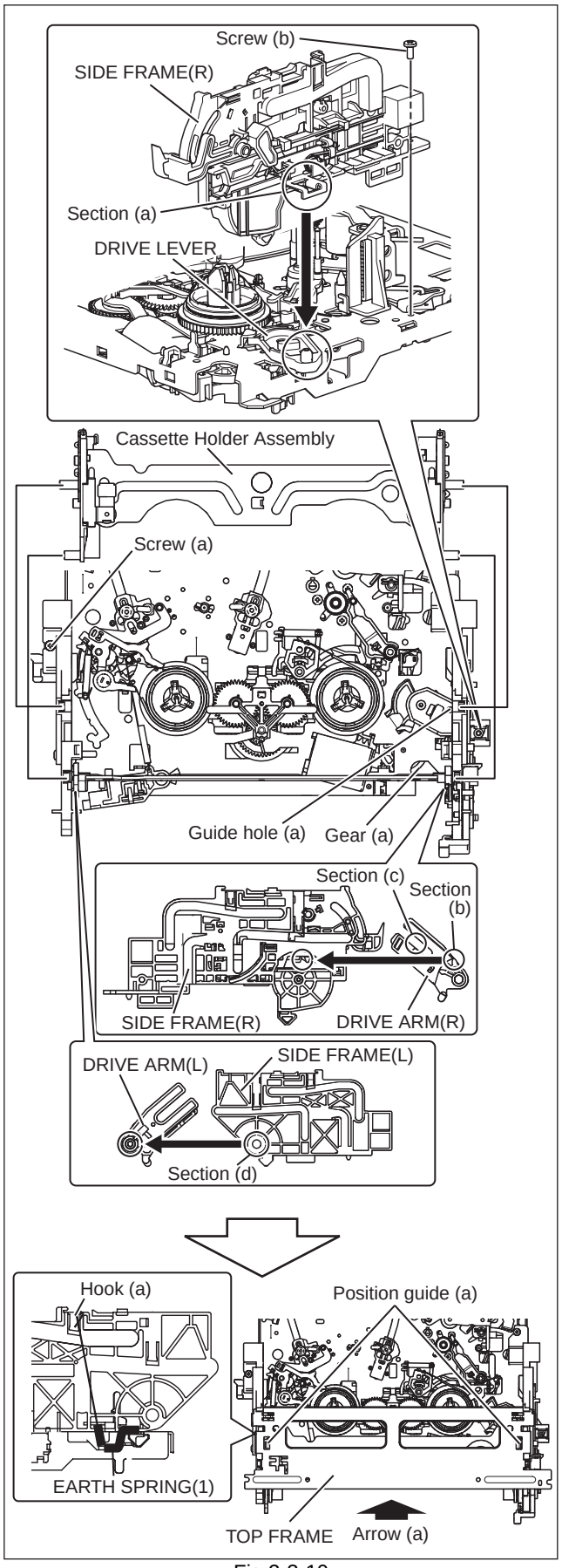


Fig.2-3-10

2.3.6.2 A/C head

2.3.6.2.1 Removal

(1) Remove screws (a) and (b).
(2) Remove the A/C head together with the head base.
(3) Remove the screws (c), (d) and (e) to remove the spring (a) and the A/C head from the Head base.

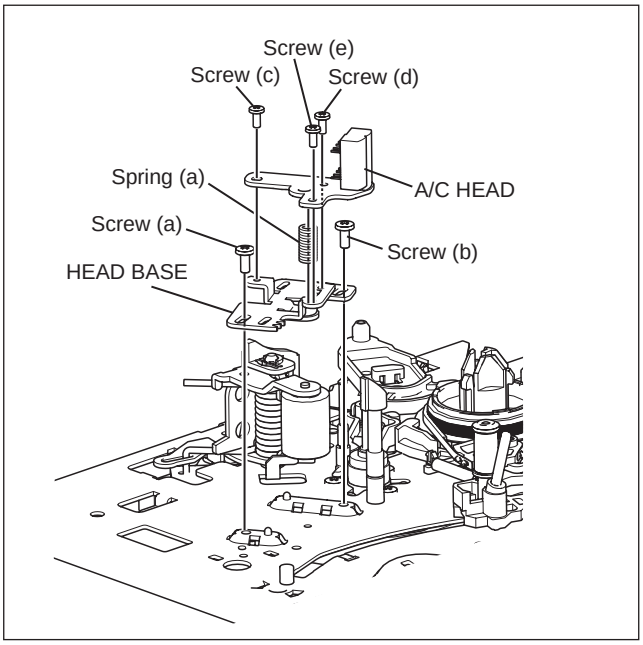


Fig.2-3-11

2.3.6.2.2 Installation (initial setting)

To install the A/C head to the head base, secure the screws in the order of (c), (d) and (e). To make the adjustment easy, temporarily elevate the A/C head.

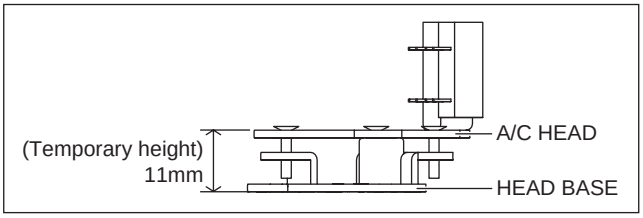


Fig.2-3-12

2.3.6.3 Guide arm, pinch roller arm

2.3.6.3.1 Removal

(1) Remove the spring (a) from the hook (a) and detach the guide arm assembly.
(2) Release the catch (a) to remove the lid guide.
(3) Remove the spring (b) from the hook (b) and detach the pinch roller arm assembly.

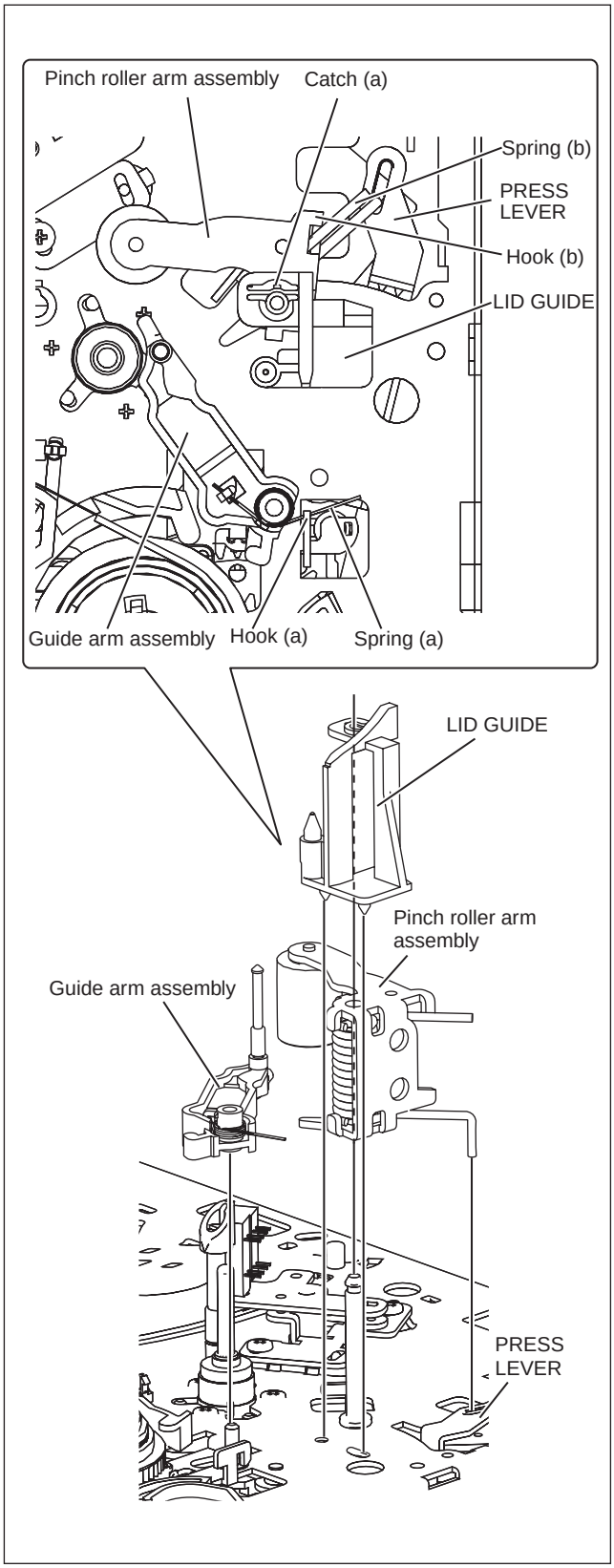


Fig.2-3-13

2.3.6.4 Idler arm, idler gear 1/2

2.3.6.4.1 Removal

(1) Release the catches (a) and (b) to detach the idler arm.
(2) Detach the idler gear 1/2.

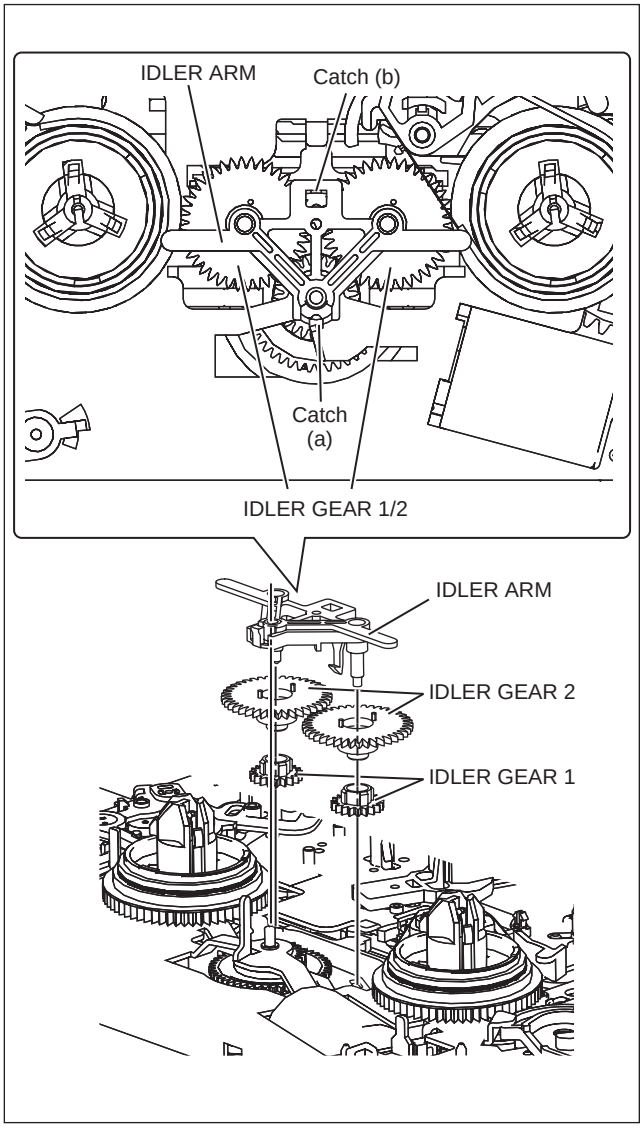


Fig.2-3-14

2.3.6.5 Main brake (T), brake lever, tension arm, reel disk (S/T), Rec safety lever

2.3.6.5.1 Removal

(1) Remove the spring (a). (Detach section (b) of the spring (a).)
(2) Release the catch (a) to detach the main brake (T).
(3) Release the catch (b) to detach the reel disk (T) and the spacer.
(4) Lift up and turn section (b) of the brake lever counterclockwise to remove the brake lever.
(5) Remove the spring (b) from the hook (a).
(6) Release the catch (c) to detach the tension arm.
(7) Release the catch (d) to detach the reel disk (S) and the spacer.
(8) Remove the spring (c) from the hook (b).
(9) Turn the tension arm base in the direction shown by arrow (a) to release catch (e). Place the projections of the tension arm base to the holes (a) to detach the tension arm base.
(10) While releasing the catch (f), turn the Rec safety lever counterclockwise to remove it.

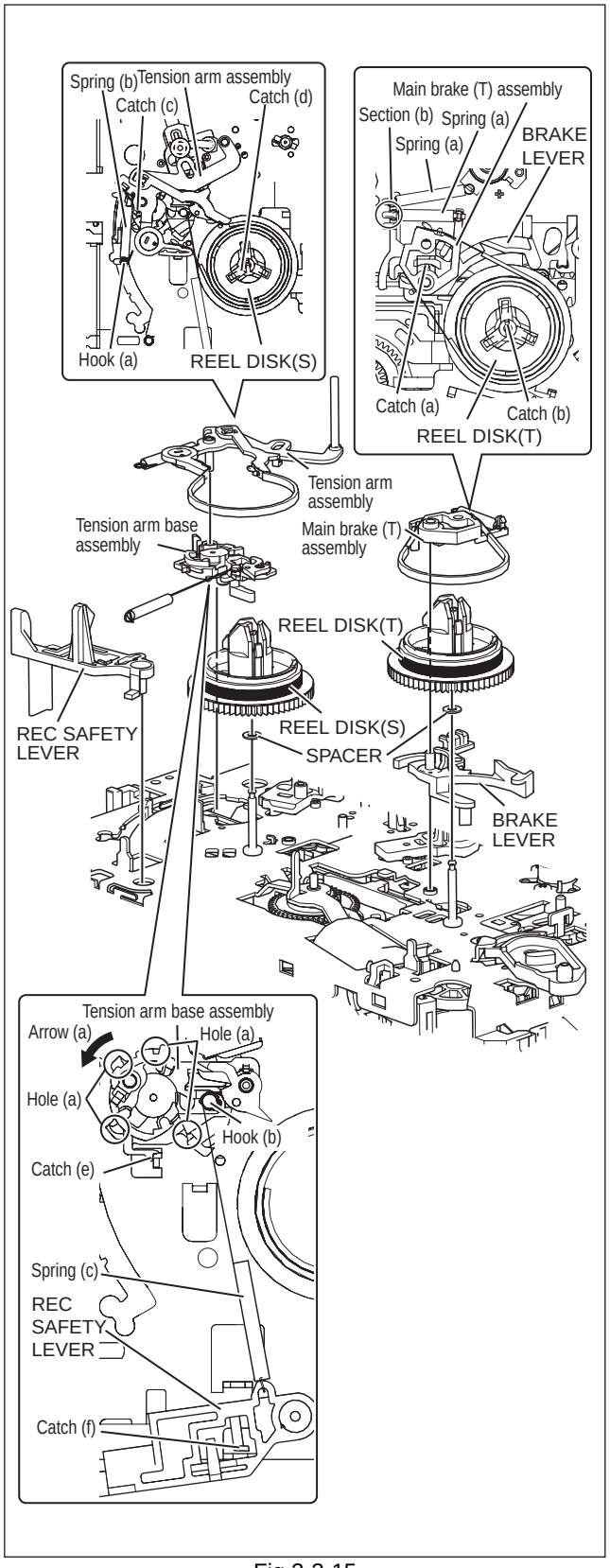


Fig.2-3-15

2.3.6.6 Press lever, control cam, capstan brake assembly, loading motor assembly

2.3.6.6.1 Removal

(1) Remove the slit washer (a) to detach the press lever.
(2) Release the slit washer (b) to detach the control cam.
(3) Release the catch (b) to detach the capstan brake assembly.
(4) Remove the solder (a).
(5) Remove the screw (a).
(6) Release the catches (c) and (d) to detach the loading motor assembly.

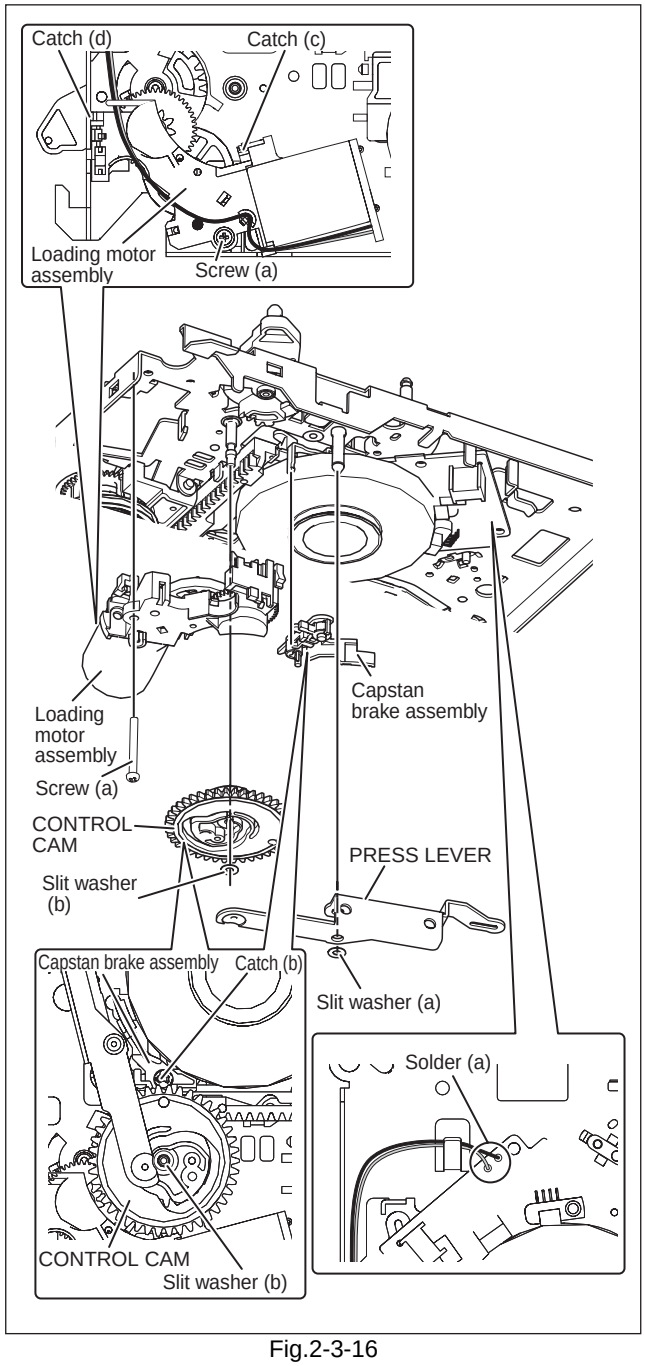


Fig.2-3-16

2.3.6.6.2 Installation (phase adjustment)

(1) Attach the loading motor assembly to the main deck.
(2) Secure the screw (a).
(3) Solder the wire to section (a).
(4) Arrange the wire along with the position guide (b).
(5) Attach the capstan brake assembly to the main deck.
(6) Place the main deck on the guide hole (a) of the control plate.
(7) Place the main deck on the guide hole (b) of the drive lever.
(8) Place the main deck no guide hole (c) of the control cam to install the control cam.
(9) Move the capstan brake in the direction shown by the arrow (a) to attach the press lever to the shaft (a). Make sure that the boss of the press lever fits in the control cam, and that the shaft (b) of the pinch roller arm assembly connects with the hole of the press lever.
(10) Attach slit washer (a) to shaft (a).

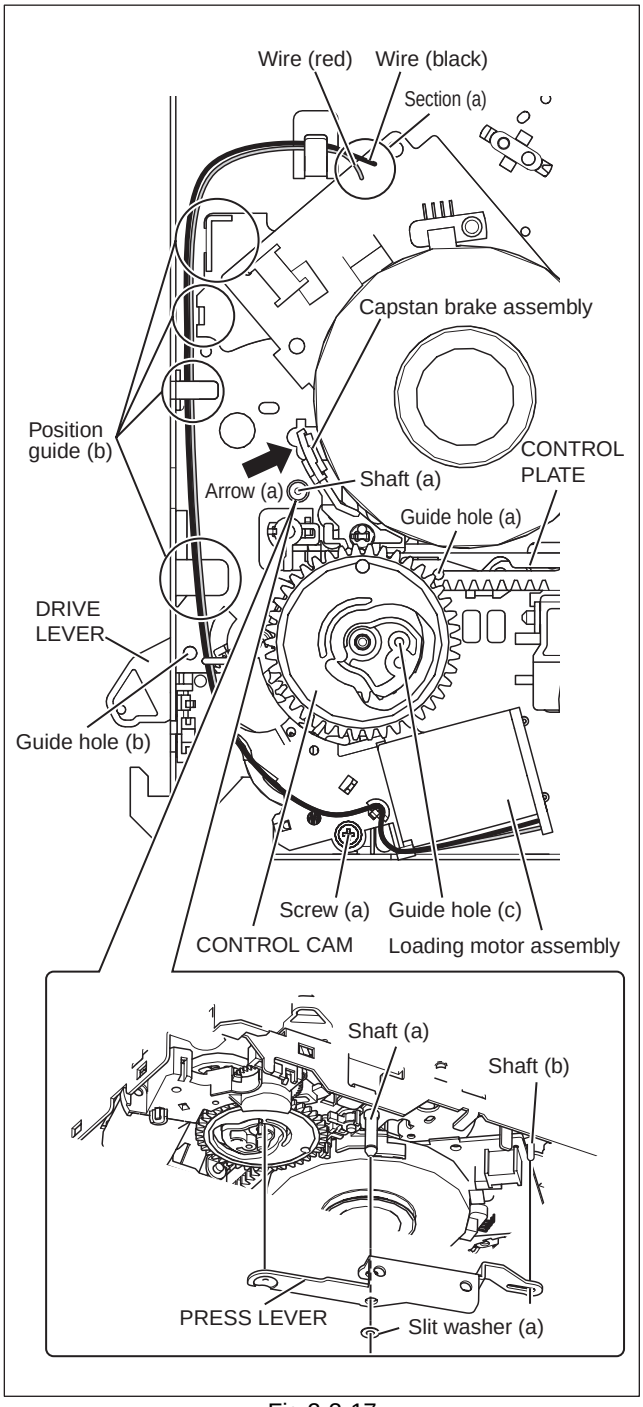


Fig.2-3-17

Note:

- When replacing the worm bearing of the loading motor assembly, attach it according to the following specification.
  If worm bearing is not attached correctly, a mechanism noise may occur. (See Fig. 2-3-18)

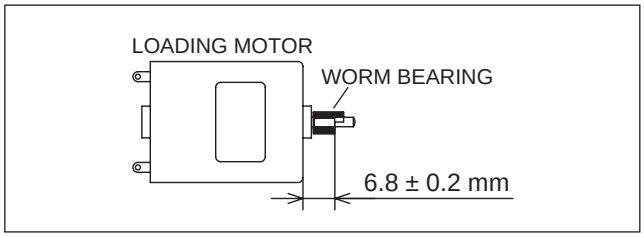


Fig.2-3-18

2.3.6.7 Capstan motor, load gear, control plate

2.3.6.7.1 Removal

(1) Detach the belt.
(2) Check that the FFC connector on the drum is disconnected.
(3) Release the catch (a) to remove the FFC wire.
(4) Remove the screws (a) to detach the capstan motor.
(5) Remove the screws (b) to detach the fixing plate.
(6) Release the catch (b) to detach the load gear.
(7) Turn the load gear (S/T) in the loading direction to detach it.
(8) Remove the control plate.

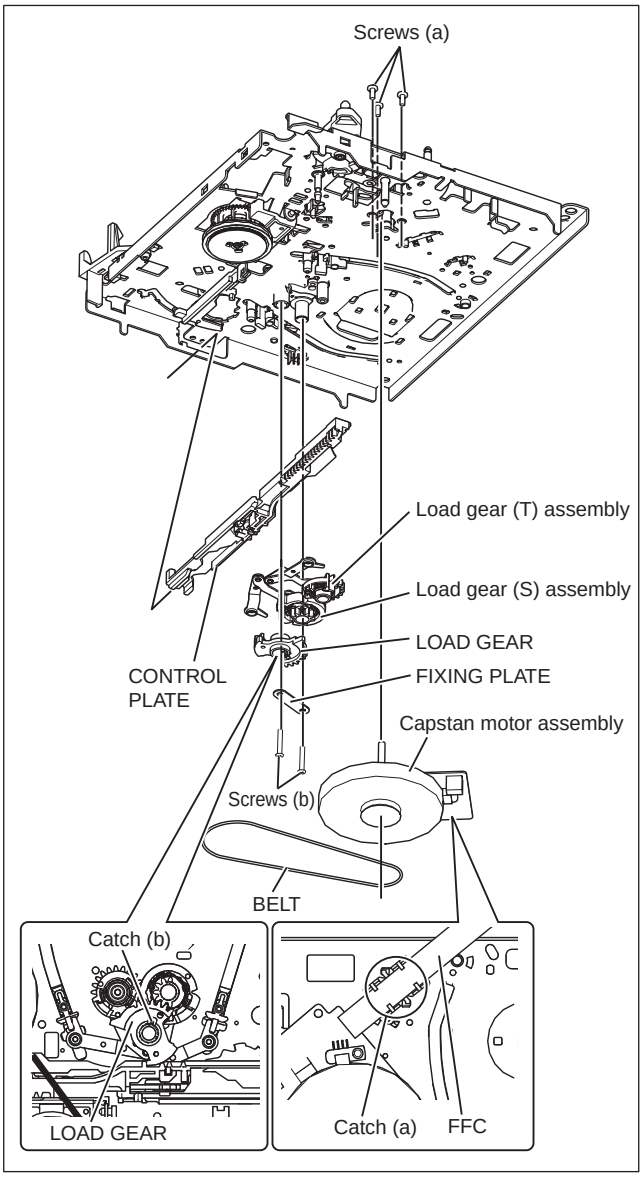


Fig.2-3-19

2.3.6.7.2 Installation (phase adjustment)

(1) Place the main deck on the guide hole (a) of the tension arm lever.
(2) Place the main deck on the guide hole (b) of the brake lever.
(3) Attach the control plate to align with the position guide (a).
(4) Place the hole (c) of the load arm (T) on the pole base (T) and the load gear (T) on the load gear base.
(5) Place the hole (d) of the load arm (S) on the pole base (S) and the load gear (S) on the load gear base. Be sure to align the guide mark (e) of the load gear (T) to that of the load gear (S).
(6) Turn the load gear (S/T) in the unloading direction to place the main deck on the guide hole (f) of the load gear (T).
(7) Place the main deck on the guide hole (g) of the control plate.
(8) Attach the load gear on the load gear base so that the control plate is placed on the edge (h) of the load gear.
(9) Place the fixing plate on the shaft of the load gear base and secure the screws (b).

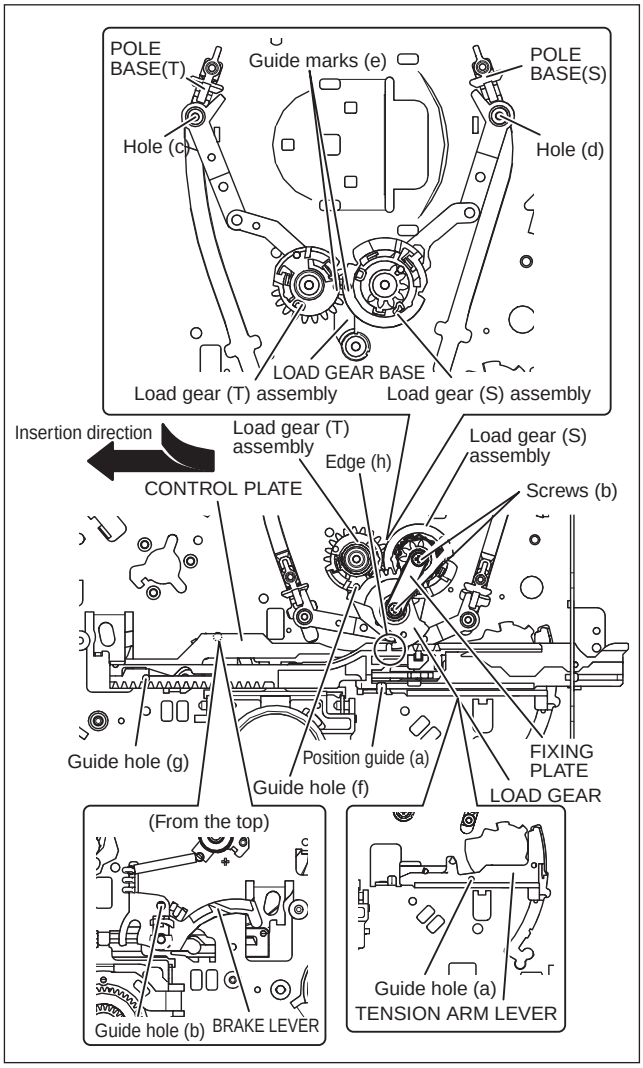


Fig.2-3-20

2.3.6.8 Clutch unit assembly, direct gear

2.3.6.8.1 Removal

(1) Remove the slit washer (a) to detach the clutch unit assembly.
(2) Remove the spring (a) and the direct gear.

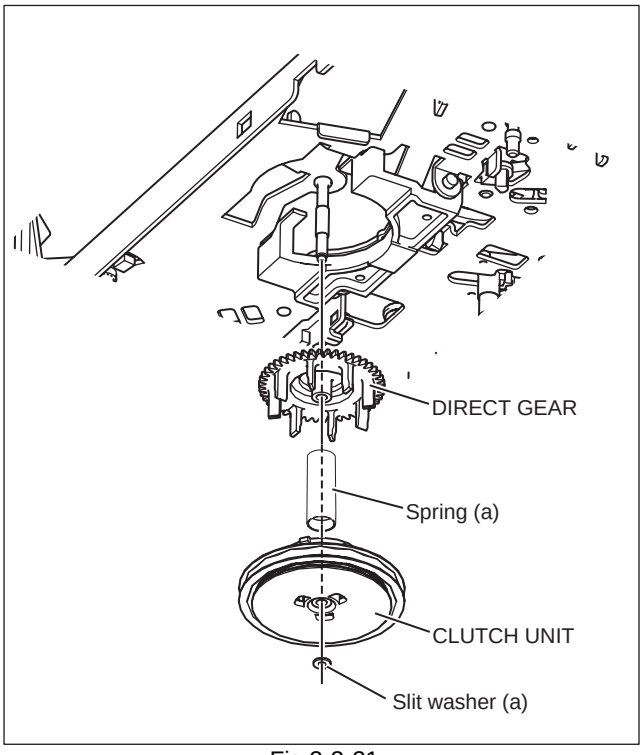
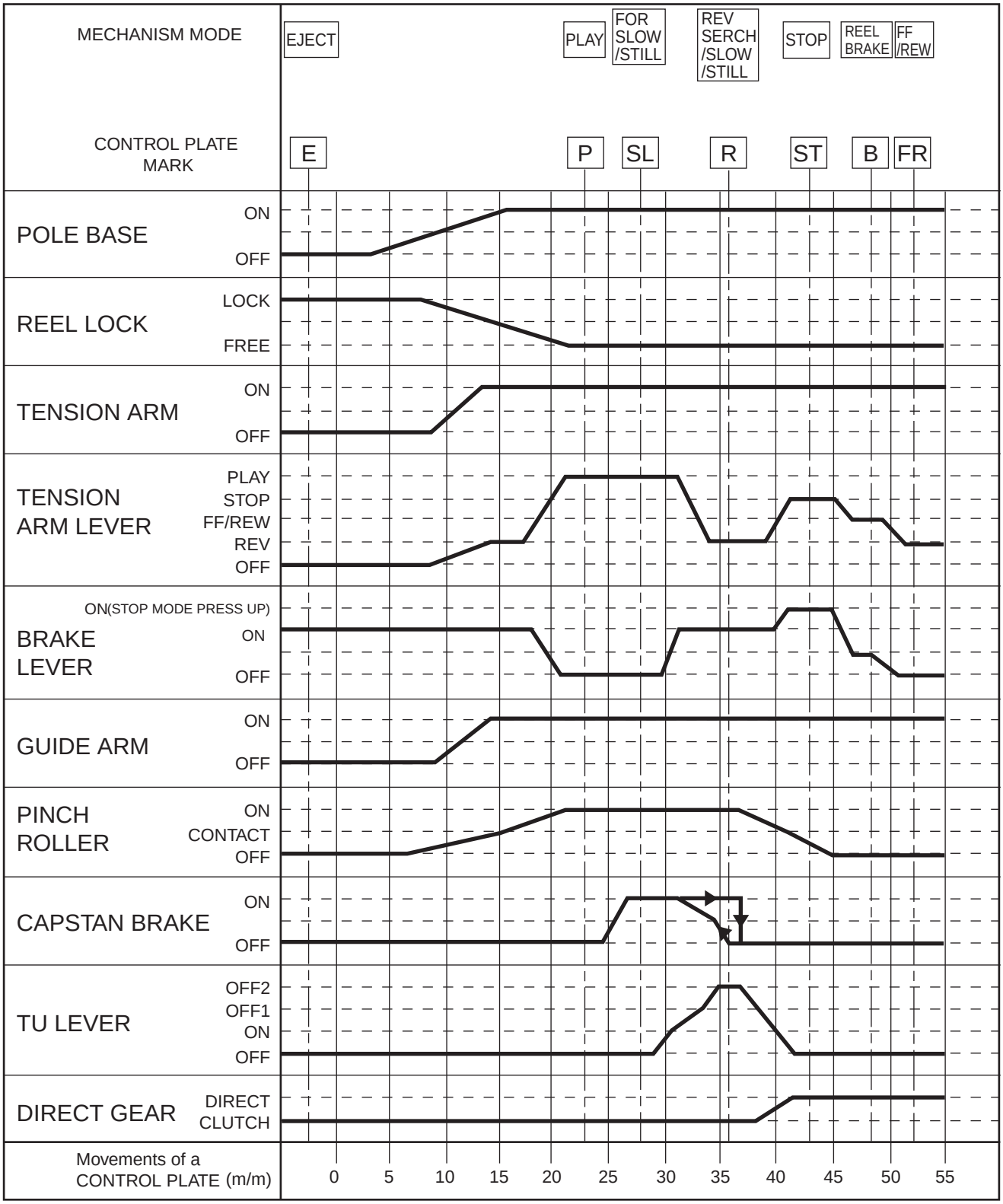


Fig.2-3-21

2.3.7 MECHANISM TIMING CHART



2.3.8 REMARKS

2.3.8.1 Cleaning

(1) For cleaning of the upper drum (particularly video heads), use fine-woven cotton cloth with alcohol soaks through. Do not move the cloth but turn the upper drum counterclockwise.

NOTE:
Make sure not to move the cloth in the vertical direction to the video head, since it may cause damage of the video heads.

(2) For cleaning of parts of the tape transport system except the upper drum, use fine-woven cotton cloth or cotton swab soaked alcohol.

(3) After cleaning, confirm that the cleaned parts are completely dry before loading the deck with cassette tape.

2.3.8.2 Applying oil and grease

(1) Periodical oiling and greasing are not required but should be done to new parts when replacing. If oil and grease on the other parts of the other party are old and dirty, wipe them clean and apply new oil or grease.

(2) For parts and points to apply oil and grease, refer to the exploded view of the 3.3 VHS MECHANISM ASSEMBLY. Fig.2-3-22 specifies oil and grease to be used.

(3) When oiling, clean the objective parts with alcohol first and apply one or two drop(s) of oil. Too much oiling causes rotary parts to slip because of oil leakage.

Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	COSMO-HV56	BB

specifies oil and grease to be used

Fig.2-3-22

JVC

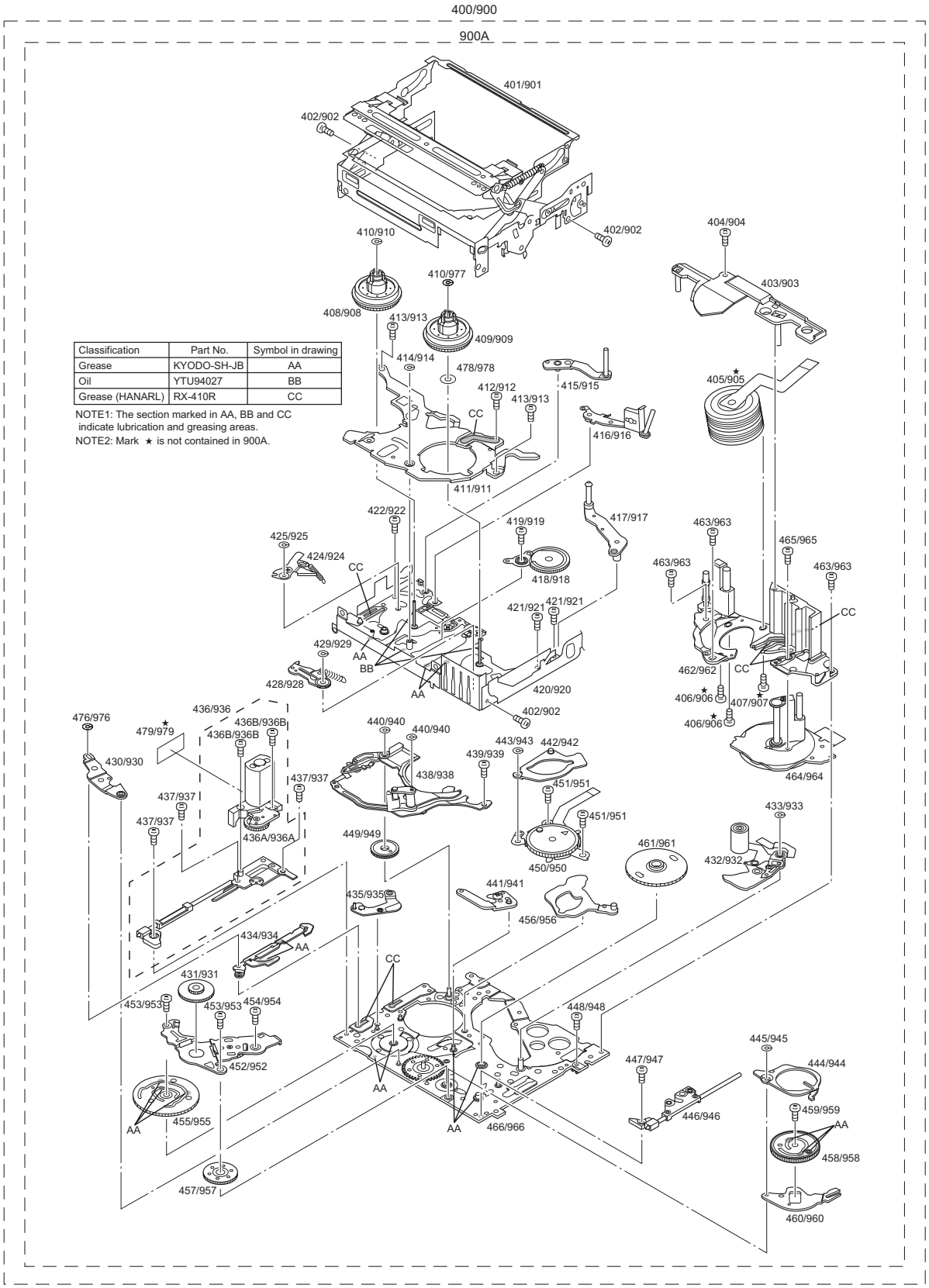
VICTOR COMPANY OF JAPAN, LIMITED
AV & MULTIMEDIA COMPANY CAMCORDER CATEGORY 12, 3-chome, Moriya-cho, kanagawa-ku, Yokohama, kanagawa-prefecture, 221-8528, Japan

(No.86700)

Printed in Japan
200304WPC

SECTION 3
PARTS LIST

3.1 DVC MECHANISM ASSEMBLY



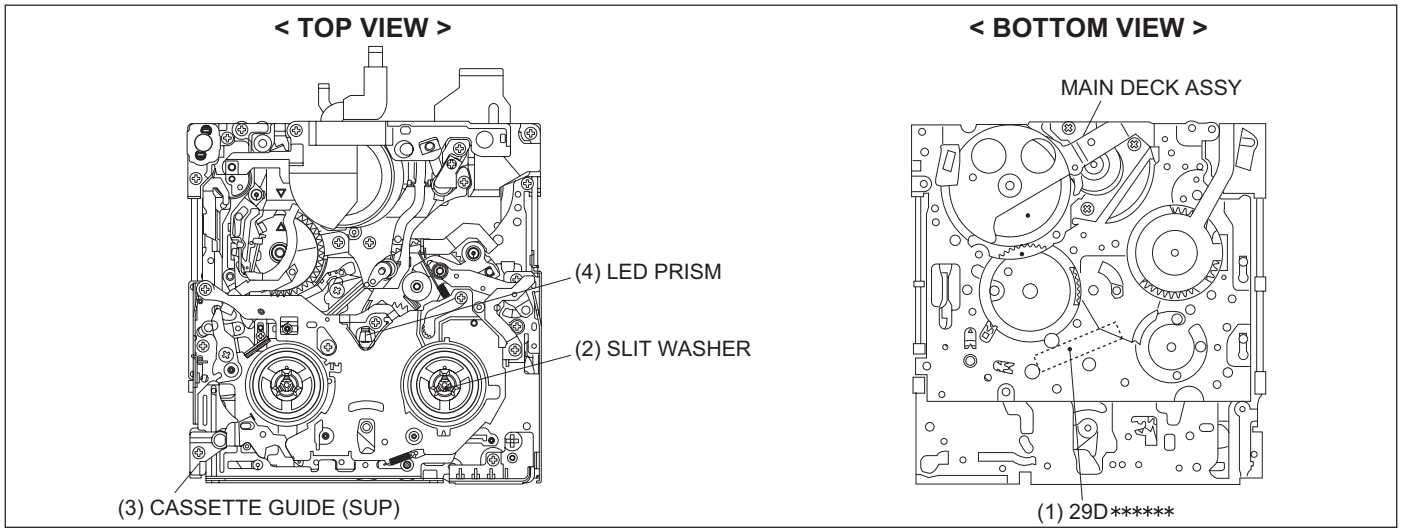
Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	YTU94027	BB
Grease (HANARL)	RX-410R	CC

NOTE1: The section marked in AA, BB and CC indicate lubrication and greasing areas.
NOTE2: Mark ★ is not contained in 900A.

Fig.3-1-1

3.1.1 DVC MECHANISM ASSEMBLY PART LIST

- Since parts numbers described here are the numbers at the time of manualissue, they are subject to change without notice. Therefore, be sure to see a parts list in the service manual of each model as for parts numbers.
- To distinguish the mechanism assembly with the symbol number of 400-499 from the mechanism assembly with the symbol number of 900-999, see the following procedures.
  (1) See the numbers on the backside of the MAIN DECK ASSY.
  For example, "29D******" is printed on the backside of the mechanism assembly with the symbol number of 900-999 (YMA0029D in this example). See the first three characters and numbers from the left.
  (2) See the color of the SLIT WASHER on the REEL DISK (TU).
  A red slit washer is used (the same color as a slit washer of CASSETTE GUIDE (SUP)) in the mechanism assembly with the symbol number of 400-499. A black slit washer is used in the mechanism assembly with the symbol number of 900-999.
  However, the black slit washer may be changed into a red one for the purpose of parts unification.
  (3) See the color of the CASSETTE GUIDE(SUP).
  Light-brown CASSETTE GUIDE(SUP) is used in the mechanism assembly with the symbol number of 400-499.
  Black CASSETTE GUIDE(SUP) is used in the mechanism assembly with the symbol number of 900-999.
  (4) See the shape of the LED PRISM. LED PRISM consists of only resin in the mechanism assembly with the symbol number of 400-499.
  Upper part of the LED PRISM is covered with black metal in the mechanism assembly with the symbol number of 900-999.



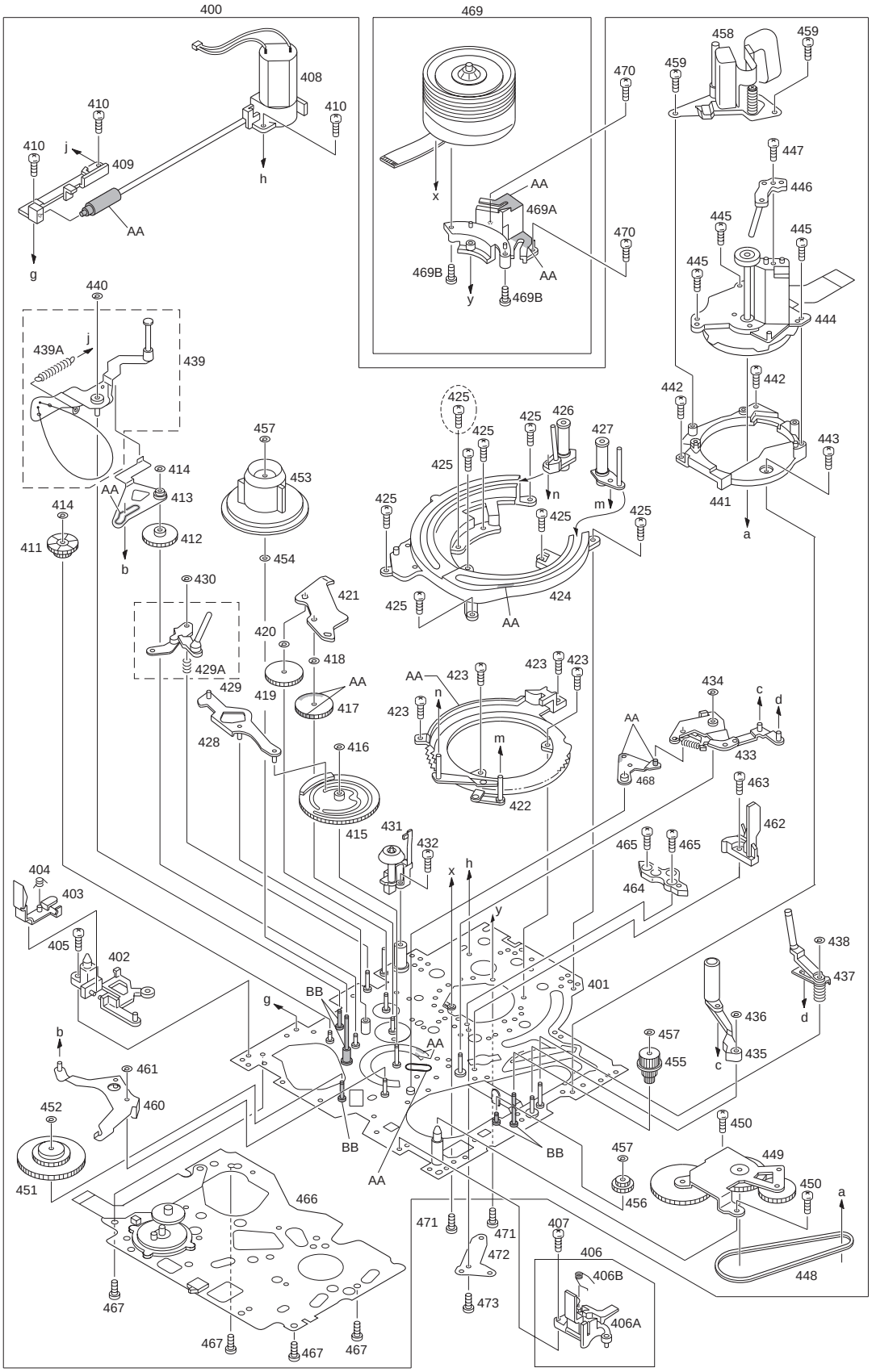
Part Name	Symbol No.	Part No.	Part No.	Part No.	Symbol No.	Part No.	Patr No.
MECHA(A) ASSY	400	YMA0029C	YMA0029M	YMA0029L	900	YMA0029H	YMA0029E
MECHA(A)ASSY	-	-	-	-	900A	YMA0029D	-
CASSETTE HOUSING ASSY	401	LY31543-002E*	LY31543-002H	←	901	LY32870-001G*	LY32870-001J
MINI SCREW,X3	402	YQ43893-8	←	←	902	←	←
UPPER BASE ASSY	403	LY31542-001J	←	←	903	LYH30420-001A	←
MINI SCREW	404	YQ43893*	QYSPSPU1425M	←	904	←	←
DRUM ASSY	405	**	**	**	905	**	**
DAMP.SCREW ASSY,X2	406	LY42820-001A	←	←	906	←	←
DAMP.SCREW ASSY	407	LY42820-002A	←	←	907	←	←
REEL DISK ASSY (SUP)	408	LY31538-001B*	LY31538-001F	←	908	←	←
REEL DISK ASSY (TU)	409	LY31538-002B*	LY31538-002H	LY31538-002G	909	LY31538-002H	←
SLIT WASHER,X2 or X1	410	YQ44246,(x2)	←,(x2)	←,(x2)	910	←*,(x1)	←,(x2)
REEL COVER ASSY	411	LY10217-001A*	LY10217-001F	←	911	LY10372-001D	←
MINI SCREW	412	LY42120-001A*	LY42120-002A	←	912	←	←
MINI SCREW,X2	413	LY41945-003A	←	←	913	←	←
SLIT WASHER	414	YQ44246	←	←	914	←	←
TENSION ARM ASSY	415	LY42025-001C	←	←	915	LY43725-001D	←
SLANT POLE ARM ASSY	416	LY31535-001F	←	←	916	LYH40269-001A	←
TU ARM ASSY	417	LY42031-001G*	LY42031-001K	←	917	LY43731-001F	←
SWING ARM ASSY	418	LY31531-001D	←	←	918	←	←
MINI SCREW	419	YQ43893	←	←	919	←	←
SLIDE DECK FINAL ASSY	420	LY20530-003B*	LY20530-003E	←	920	LYH30424-001A	←

Part Name	Symbol No.	Part No.	Part No.	Part No.	Symbol No.	Part No.	Patr No.
MINI SCREW,X2	421	YQ43893	←	←	921	←	←
MINI SCREW	422	LY43023-001A	←	←	922	←	←
PAD ARM ASSY	424	LY31533-001E	←	←	924	LYH30419-001A	←
SLIT WASHER	425	YQ44246	←	←	925	←	←
TU BRAKE ASSY	428	LY42016-001B	←	←	928	LYH40270-001A	←
SLIT WASHER	429	YQ44246	←	←	929	←	←
TENSION CONTROL LEVER ASSY	430	LY41959-001B	←	←	930	LY43684-001A	←
CENTER GEAR	431	LY31525-001B	←	←	931	LY32861-001A	←
PINCH ROLLER ARM FINAL ASSY	432	LY31516-001E	←	LY31516-001F	932	←	←
SLIT WASHER	433	YQ44246	←	←	933	←	←
TENSION CONTROL PLATE ASSY	434	LY41956-001C	←	←	934	LY43681-001A	←
BRAKE CONTROL LEVER ASSY	435	LY41962-001B*	LY41962-001C	←	935	LY43687-001A	←
MOTOR BRACKET ASSY	436	LY20525-002C	←	←	936	LYH30421-001A	←
LOADING MOTOR	436A	QAR0138-001	←	←	936A	←	←
TAPPING SCREW,x2	436B	LY41940-001A	←	←	936B	←	←
MINI SCREW,x3	437	YQ43893	←	←	937	←	←
GUIDE RAIL ASSY	438	LY20528-001R*	LY20528-001U	←	938	LYH30422-001A	←
MINI SCREW	439	YQ43893	←	←	939	←	←
SLIT WASHER,X2	440	YQ44246	←	←	940	←	←
SLIDE LEVER2 ASSY	441	LY31498-001C	←	LY31498-001D	941	LY32843-001A	←
LOADING PLATE ASSY	442	LY41965-001A	←	←	942	LY43690-001A	←
SLIT WASHER	443	YQ44246	←	←	943	←	←
EJECT LEVER	444	LY31522-001B	←	←	944	LY32858-001A	←
SLIT WASHER	445	YQ44246	←	←	945	←	←
BASE R ASSY	446	LY41929-001E*	LY41929-001F	←	946	LYH40271-001A	←
MINI SCREW	447	YQ43893	←	←	947	←	←
MINI SCREW	448	LY41945-001B	←	←	948	←	←
MODE GEAR	449	LY41930-001A	←	←	949	LY43665-001A	←
ROTARY ENCODER	450	QSW0876-003	←	←	950	←	←
MINI SCREW,X2	451	YQ43893	←	←	951	←	←
GEAR COVER ASSY	452	LY31524-001A	←	←	952	LY32860-001A	←
MINI SCREW,X2	453	YQ43893	←	←	953	←	←
MINI SCREW	454	YQ43893-4	←	←	954	←	←
MAIN CAM ASSY	455	LY41948-001C	←	←	955	LY43676-001A	←
SLIDE ARM ASSY	456	LY41941-001B	←	←	956	←	←
CONNECT GEAR 2	457	LY41951-001B	←	←	957	LY43678-001A	←
SUB CAM ASSY	458	LY41954-001B	←	LY41954-001E	958	←	←
MINI SCREW	459	LY42120-001A	←	←	959	←	←
CONTROL ARM ASSY	460	LY41952-001A	←	←	960	LY43692-001A	←
REEL GEAR 1	461	LY31523-001B	←	←	961	LY32859-001A	←
DRUM BASE ASSY	462	LY31508-002A*	LY31508-002B	LY33372-001A	962	LY31508-002B	←
SCREW,X3	463	QYSPSPU1425M	←	←	963	←	←
CAPSTAN MOTOR	464	QAR0142-001	←	←	964	←	←
MINI SCREW	465	YQ43893	←	←	965	←	←
MAIN DECK ASSY	466	LY10210-001D*	LY10210-001G	←	966	LY10367-001D*	LY10367-001E
SLIT WASHER	476	YQ44246	←	←	976	←	←
SLIT WASHER	477	-	-	-	977	YQ44246-6	-
WASHER	478	-	-	-	978	LY42047-005A	←
SPACER	479	-*	LY43987-001B	←	979	←	←

NOTE:

MARK ← is same as left.
MARK - is not used.
MARK * reference model was also changed.
MARK ** shows different parts number, depending on models.

3.2 VHS-C MECHANISM ASSEMBLY



Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	YTU94027	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

Fig.3-2-1

3.2.1 VHS-C MECHANISM ASSEMBLY PARTS LIST

- Since parts numbers described here are the numbers at the time of manualissue, they are subject to change without notice. Therefore, be sure to see a parts list in the service manual of each model as for parts numbers.

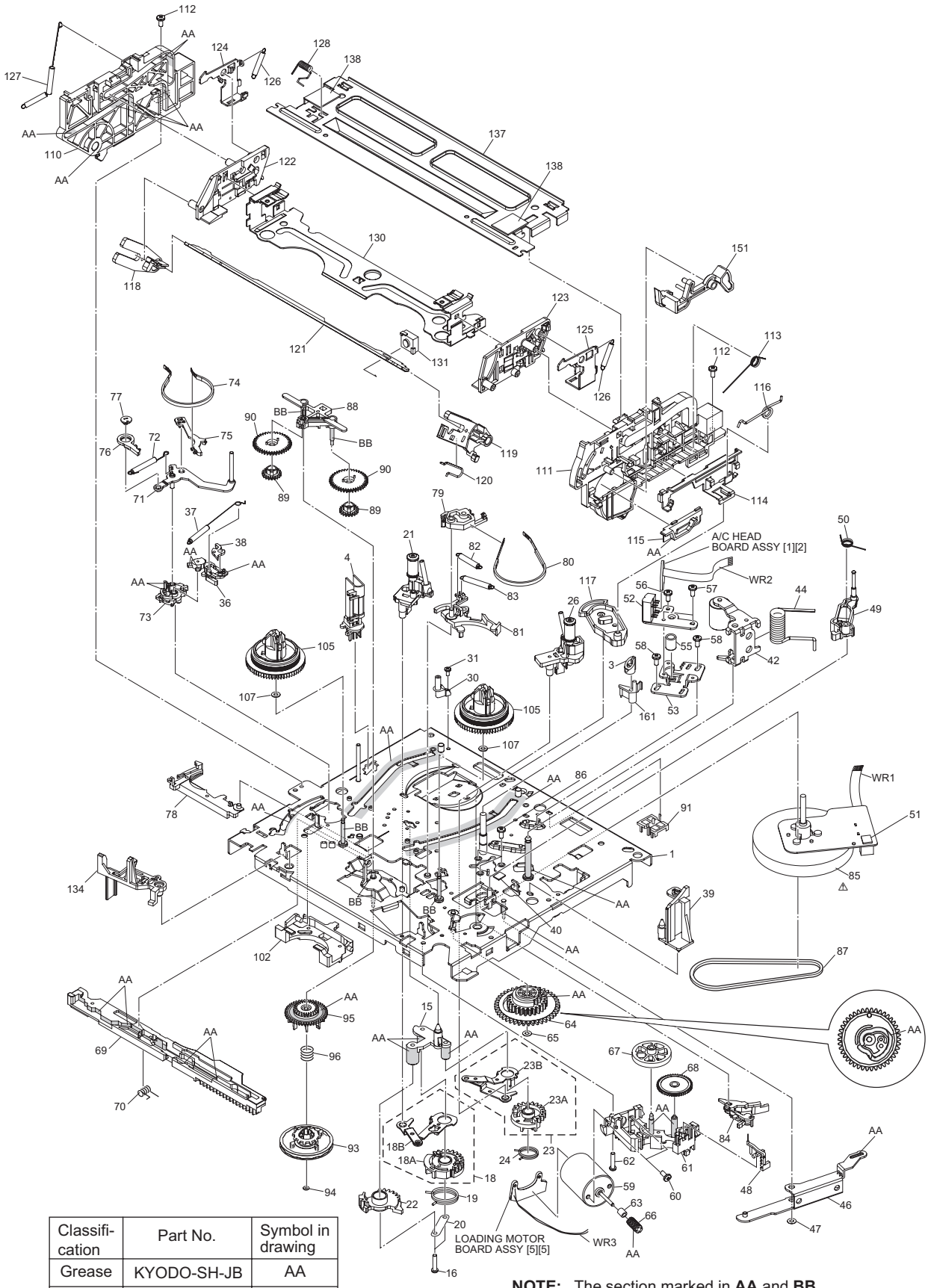
Part Name	Symbol No.	Part No.	Part No.	Part No.	Part No.	Part No.
MECHA(B) ASSY	400	YMA0033A-E	YMA0042A-E	YMA0034A-E	YMA0036A-E	YMA0040A-E
MAIN DECK ASSY	401	LY20612-001B	←	←	←	←
CASSETTE GUIDE (LEFT)	402	LY31817-001A	←	←	←	←
SW LEVER (LEFT)	403	LY31815-001A	←	←	←	←
TORSION SPRING	404	LY42581-001A	←	←	←	←
SCREW	405	LY42722-001A	←	←	←	←
CASSETTE GUIDE ASSY(RIGHT)	406	-	-	YQ44339A-7	←	←
SW.LEVER(RIGHT)	406A	-	-	YQ32162-1-3	←	←
TORSION SPRING	406B	-	-	YQ44340-1-4	←	←
SCREW	407	-	-	LY42819-001A	←	←
MOTOR BRACKET ASSY	408	LY31826-001A	←	←	←	←
WORM BRACKET	409	YQ20793	LY20951-001A	YQ20793	←	LY20951-001A
SCREW,X3	410	LY42722-001A	←	←	←	←
WHEEL GEAR	411	LY31925-001A	←	←	←	←
MIDDLE GEAR	412	LY42730-001A	←	←	←	←
CANCEL LEVER ASSY	413	LY42521-001A	←	←	←	←
SLIT WASHER,X2	414	LY42754-003A	←	←	←	←
CONTROL CAM	415	YQ20827-2-1	←	←	←	←
SLIT WASHER	416	PQM30017-25	←	←	←	←
LOADING GEAR(T)ASSY	417	LY42733-001A	←	←	←	←
SLIT WASHER	418	LY42754-003A	←	←	←	←
LOADING GEAR(S)ASSY	419	LY42732-001A	←	←	←	←
SLIT WASHER	420	LY42754-003A	←	←	←	←
COVER PLATE	421	LY42403-001A	←	←	←	←
LOADING RING ASSY	422	LY42452-001A	←	←	←	←
SCREW,X4	423	LY42728-001A	←	←	←	←
GUIDE RAIL	424	LY10239-001A	←	←	←	←
SCREW,X8 or X7	425	LY42728-001A,(X8)	←,(X7)	←,(X8)	←,(X8)	←,(X7)
POLE BASE(S)ASSY	426	LY30161-001B	←	←	←	←
POLE BASE(T)ASSY	427	LY30162-002A	←	←	←	←
DRIVE LEVER ASSY	428	LY42523-001A	←	←	←	←
SLANT ARM ASSY	429	LY42545-001B	LY44000-001B	LY42545-001B	←	LY44000-001B
TORSION SPRING(S)	429A	LY42547-001A	LY43992-001A	LY42547-001A	←	LY43992-001A
SLIT WASHER	430	LY42754-003A	←	←	←	←
ROLLER BASE ASSY	431	LY42739-003A	←	←	←	←
SCREW	432	LY42722-001A	←	←	←	←
LINK ARM ASSY	433	LY42494-001A	←	←	←	←
SLIT WASHER	434	PQM30017-25	←	←	←	←
PINCH ROLLER ARM ASSY	435	LY40018-002A	←	←	LY40018-005A	←
SLIT WASHER	436	PQM30017-25	←	←	←	←
TAKE UP GUIDE ARM ASSY	437	LY42541-001B	←	←	←	←
SLIT WASHER	438	LY42754-003A	←	←	←	←
TENSION ARM ASSY	439	LY42571-001A	←	←	←	←
TENSION SPRING	439A	LY42669-001A	←	←	←	←
SLIT WASHER	440	LY42754-003A	←	←	←	←
MOTOR BASE	441	YQ20797-1-5	←	←	←	←
SCREW,X2	442	LY42722-001A	←	←	←	←
SCREW	443	YQ44460	←	←	←	←
CAPSTAN MOTOR	444	QAR0212-001	QAR0212-002	QAR0212-001	QAR0212-002	←
TAPPING SCREW,X3	445	YQ44304	←	←	←	←
SLANT POLE BASE ASSY	446	LY42731-001A	←	←	←	←
TAPPING SCREW	447	YQ44304	←	←	←	←
TIMING BELT	448	YQ43710-2	←	←	←	←
CENTER PULLEY UNIT	449	LY42678-001A	←	←	←	LY42678-003A

Part Name	Symbol No.	Part No.	Part No.	Part No.	Part No.	Part No.
SCREW,X2	450	LY42722-002A	←	←	←	←
SUPPLY CLUTCH ASSY	451	LY42670-001A	←	←	←	←
SLIT WASHER	452	LY42754-003A	←	←	←	←
REEL DISC	453	YQ31861-1-7	←	←	←	←
WASHER	454	LY42755-001A	←	←	←	←
TAKE UP GEAR	455	LY31924-001A	←	←	←	←
BRAKE SUB GEAR	456	LY42738-001A	←	←	←	←
SLIT WASHER,X3	457	LY42754-003A	←	←	←	←
A/C HEAD UNIT	458	LY42544-001B	LY42544-002A	LY42544-001B	←	LY42544-002A
SCREW,X2	459	SPSN1750Z	←	←	←	←
EJECT LEVER ASSY	460	LY42517-001A	←	←	←	←
SLIT WASHER	461	LY42754-003A	←	←	←	←
LED GUIDE	462	YQ31833-1-1	←	←	←	←
SCREW	463	LY42722-001A	←	←	←	←
DRUM SPACER	464	LY42729-001A	←	←	←	←
SCREW,X2	465	LY42722-001A	←	←	←	←
ROTARY ENCODER	466	QSW0888-001	←	QSW0888-002	←	←
SCREW,X4	467	LY42722-002A	←	←	←	←
LINK LEVER	468	LY31814-001A	←	←	←	←
DRUM FINAL ASSY	469	**	**	**	**	**
CATCHER	469A	YDM1003-1-5	←	←	←	←
SCREW,X2	469B	QYSPSPU1735M	←	←	←	←
SCREW,X2	470	LY42722-001A	←	←	←	←
SCREW,X2	471	SPSH1740Z	←	←	←	←
BRUSH	472	LY43542-001A	←	←	←	←
SCREW	473	LY42722-003A	←	←	←	←
CASSETTE HOUSING FINAL ASSY	*155/481	LY31808-001C	LY31808-002C	LY31808-001C	LY31808-001D	LY31808-002C
SCREW,X4	*156/482	LY42722-003A	←	←	←	←
BRACKET(MECHA)	*161/484	LY32326-001A	←	←	←	←
SCREW,X2	*162/485	LY42722-003A	←	←	←	←
SIDE BRACKET L	*164/487	LY31807-001A	←	←	←	←
SCREW	*165/488	LY42722-003A	←	←	←	←

NOTE:

MARK ← is same as left.
MARK - is not used.
MARK * are shown in the parts list of FINAL ASSY of service manual of each model.
MARK ** shows different parts number, depending on models.

3.3 VHS MECHANISM ASSEMBLY



Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

Fig.3-3-1

3.3.1 VHS MECHANISM ASSEMBLY PARTS LIST

- Since parts numbers described here are the numbers at the time of manualissue, they are subject to change without notice. Therefore, be sure to see a parts list in the service manual of each model as for parts numbers.

System		VHS		S-VHS	
**Job No.		V15D Series	V16D Series	V15S Series	V16S Series
Part Name	Symbol No.	Part No.	Part No.	Part No.	Part No.
MAIN DECK ASSY	1	LP21039-001N	LP21039-001S	LP21039-001R	LP21039-001S
GUIDE POLE CAP	3	LP40097-002D	←	←	←
FULL ERASE HEAD	4	QAH0082-001	←	←	←
LOAD.GEAR BASE	15	LP30958-001B	←	←	←
SCREW,X2	16	QYTPST2620Z	←	←	←
LORD.GEAR(SUPPLY) ASSY	18	LP40798-001A	←	←	←
LORD.GEAR(SUPPLY)	18A	LP21040-001A	←	←	←
LORD.ARM(SUPPLY) ASSY	18B	LP40799-001A	←	←	←
TORSION SPRING(SUPPLY)	19	LP40837-001A	←	←	←
FIXING PLATE	20	LP40903-001A	←	←	←
POLE BASE ASSY(SUPPLY)	21	LP40806-001D	←	←	←
LOAD GEAR	22	LP30959-002A	←	←	←
LORD. GEAR(TAKE UP) ASSY	23	LP40802-001B	LP40802-001C	LP40802-001B	LP40802-001C
LORD. GEAR(TAKE UP)	23A	LP21041-001B	LP21041-001C	LP21041-001B	LP21041-001C
LORD.ARM(TAKE UP) ASSY	23B	LP40803-001A	←	←	←
TORSION SPRING(TAKE UP)	24	LP40838-001A	←	←	←
POLE BASE ASSY(TAKE UP)	26	LP40808-001F	LP40808-001E	←	←
ARM BASE	30	-	←	LP31020-004A	←
SCREW	31	-	←	QYTDST2606Z	-
TU LEVER	36	LP21055-001E	←	←	←
TENSION SPRING	37	LP40943-001A	←	←	←
T-UP HEAD	38	LP40859-001D	←	←	←
LID GUIDE	39	LP30961-001C	←	←	←
SPACER	40	LP30002-0B7A	←	←	-
PINCH ROLLER ARM ASSY	42	LP40810-001A	←	←	←
TORSION SPRING	44	LP40840-001C	LP40840-001D	←	←
PRESS LEVER	46	LP30963-001B	←	←	←
SLIT WASHER	47	PQM30017-24	←	←	←
S-SWITCH	48	-	←	LP40930-002E	←
GIDE ARM ASSY	49	LP40813-001D	←	←	←
TORSION SPRING	50	LP40841-001A	←	←	←
SPACER	51	LP30002-090A	←	←	-
A/C HEAD	52	QAH0081-001	←	←	←
HEAD BASE	53	LP30965-001A	←	←	←
COMPRESSION SPRING	55	LP40842-001A	LP40842-001D	LP40842-001A	LP40842-001D
SCREWX1 A/C HEAD	*56	QYTDST2006M	←	←	←
A/C HEAD SCREW,X2	*57	LP41036-001A	←	←	←
SCREW,X2 A/C HEAD	*58	QYTDST2606Z	←	←	←
LOADING MOTOR	59	QAR0023-001	←	←	←
SCREW,X2	60	QYTPSP3003Z	←	←	←
MOTOR BRACKET	61	LP21056-002F	LP21056-002G	←	←
TAP SCREW	62	QYTPST2620Z	←	←	←
WORM BEARING	63	LP40814-001B	←	←	←
CONTROL CAM	64	LP21044-001D	←	←	←
SLIT WASHER	65	PQM30017-24	←	←	←
WORM GEAR	66	LP40815-001A	←	←	←
HELICAL GEAR	67	LP40816-001B	←	←	←
CONNECT GEAR	68	LP40817-001A	←	←	←

System		VHS		S-VHS	
**Job No.		V15D Series	V16D Series	V15S Series	V16S Series
Part Name	Symbol No.	Part No.	Part No.	Part No.	Part No.
CONTROL PLATE	69	LP10400-001H	←	←	LP10400-001J
TORTION SPRING	70	LP40843-001A	←	←	←
TENSION ARM ASSY	71	LP40818-001B	←	←	←
TENSION SPRING	72	LP40844-001C	LP40844-001E	LP40844-001D	LP40844-001E
TENSION ARM BASE	73	LP21045-001D	←	←	←
TENSION BAND ASSY	74	LP40821-001A	←	←	←
BAND HOLDER-1	75	LP30967-001B	←	←	←
BAND HOLDER-2	76	LP30968-001C	←	←	←
ADJUST PIN	77	LP40822-002B	←	←	←
TENSION ARM LEVER	78	LP31000-005E	←	←	←
MAIN BRAKE(TAKE UP)	79	LP21046-001C	←	←	←
BAND BRAKE ASSY	80	LP40824-001A	←	←	←
BRAKE LEVER	81	LP30969-002A	LP30969-002B	LP30969-002A	LP30969-002B
TENSION SPRING	82	LP30003-033B	←	←	←
TENSION SPRING	83	LP30003-035B	←	←	←
CAPSTAN BRAKE ASSY	84	LP40825-001B	←	←	←
CAPSTAN MOTOR	85	QAR0204-002	←	←	←
SCREW,X3 CAPSTAN MOTOR	86	QYTPSG2606M	QYTPSG2606Z	QYTPSG2606M	QYTPSG2606Z
BELTCAPSTAN MOTOR	87	LP30005-010A	←	←	←
IDLER ARM	88	LP30970-001A	←	←	←
IDLER GEAR 1,X2	89	LP40828-004A	←	←	←
IDLER GEAR 2,X2	90	LP40829-001B	LP40829-002A	LP40829-001B	LP40829-002A
WIRE HOLDER	91	LP31014-001A	←	←	←
CLUTCH UNIT	93	LP40934-001B	←	←	←
SLIT WASHER	94	PQM30017-47	←	←	←
DIRECT GEAR	95	LP30973-001A	←	←	←
COMPRESS. SPRING	96	LP40939-001A	←	←	←
CHANGE LEVER	102	LP30974-001B	←	←	←
REEL DISK,X2	105	LP21049-001A	←	←	←
SPACER,X2	107	LP30017-004A	←	←	←
SIDE FRAME(L)	110	LP10401-001F	LP10401-001H	LP10401-001F	LP10401-001H
SIDE FRAME(R)	111	LP10402-001F	LP10402-001K	LP10402-001G	LP10402-001K
SCREW,X2	112	QYTDST2606Z	←	←	←
TORSION SPRING	113	LP40917-001C	LP40917-001D	←	←
SIDE PLATE	114	LP30976-001D	LP30976-001E	←	←
LIMIT PLATE	115	LP30977-002D	←	←	←
LIMIT SPRING	116	LP40846-001C	←	←	←
DRIVE LEVER	117	LP31100-001B	←	←	←
DRIVE ARM(L)	118	LP30978-001B	←	←	←
DRIVE ARM(R)	119	LP30979-001H	LP30979-001N	LP30979-001H	LP30979-001N
TORSION SPRING	120	LP40847-001B	←	←	←
CONNECT PLATE	121	LP30980-001A	LP30980-001E	LP30980-001B	LP30980-001E
SIDE HOLDER(L)	122	LP10403-001C	←	←	←
SIDE HOLDER(R)	123	LP10404-001D	LP10404-001E	←	←
LOCK LEVER(L)	124	LP30983-001A	LP30983-001B	LP30983-001A	LP30983-001B
LOCK LEVER(R)	125	LP30984-001A	LP30984-001B	LP30984-001A	LP30984-001B
TENSION SPRING,X2	126	LP40924-001C	LP40924-001D	←	←
EARTH SPRING(1)	127	LP40856-001A	←	LP40856-001B	LP40972-001A
EARTH SPRING(2)	128	LP40857-001B	←	←	←
C.HOLDER ASSY	130	LP30981-001E	LP30981-001G	LP30981-001F	LP30981-001G
C.H STOPPER	131	LP31135-001A	-	LP31135-001A	-

System		VHS		S-VHS	
**Job No.		V15D Series	V16D Series	V15S Series	V16S Series
Part Name	Symbol No.	Part No.	Part No.	Part No.	Part No.
R.SAFETY LEVER	134	LP21051-002C	←	←	←
TOP FRAME	137	LP21052-001F	LP21052-001J	LP21052-001H	LP21052-001J
SPACER	138	LP30002-0A7A	-	LP30002-0A7A	-
DOOR OPENER	151	LP30985-001G	←	←	←
TAPE GUIDE	161	-	LP40993-001A	-	LP40993-001A
E-CARD WIRE DRUM.M	WR1	WJT0059-001C	WJT0059-001E	WJT0059-001D	WJT0059-001E
E-CARD WIRE AC HEAD CN2001	WR2	WJT0067-001B	←	←	←
E-FL/RB WIRE LOADING MOTOR	WR3	WJS0022-001A	←	←	←
MEMO	-	PMD0035B-C	PMD0040A-C	PMD0036B-C /PMD0039A-C	PMD0037A-C /PMD0041A-C

NOTE:

MARK ← is same as left.
MARK - is not used.
MARK * shows that Symbol No. and Parts No. may sometimes be different from those in each manual. See the table below for final Symbol No. and Parts No.
MARK ** is Job No.
To identify a model, see the Job No. of the model.
Job No. is shown just above the service manual number at the lower right of the service manual of each model.